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JULES VERNE AT HOME.

HIS OWN ACCOUNT OF HIS LIFE AND WORK.

Reported by R. H. Sherard.

"THE great regret of my life is that I have never taken any place in French literature."

As the old man said this his head drooped, and a ring of sadness sounded in the cheerful and hearty voice.

"*Je ne compte pas dans la littérature Française*," he repeated. Who was it who spoke thus, with drooping head, and with a ring of sadness in his cheerful voice? Some writer of cheap but popular *feuilletons* for the halfpenny press, some man of letters who has never made a scruple of stating that he looks upon his pen as a money-getting implement, and who has always preferred to glory and honor a large account at the cash office of the Society of French Men of Letters? No; strange, monstrous, as it will appear, it was none other than Jules Verne. Yes, Jules Verne, the Jules Verne, your Jules Verne and mine, who has delighted us all the world over for so many years, and who will delight the world for generations and generations to come.

It was in the cool withdrawing-room of the Société Industrielle at Amiens that the master said these words, and I shall never forget the tone of sadness in which he said them. It was like the confession of a wasted life, the sigh of an old man over what can never be recalled. It was to me a poignant sorrow to hear him speak thus, and all that I could do was to say, with no unfeigned enthusiasm, that he was to me and millions like me, a great master, the subject of our unqualified admiration and respect, the novelist who delights many of us more than all the novelists that have ever taken pen in hand. But he only shook his gray head and said: "I do not count in French literature."

Sixty-six, and but for his limp still hale and hearty, with much in his face that reminds one of Victor Hugo; like a fine old sea captain, ruddy of face and full of life. One eyelid slightly droops, but the gaze is firm and clear, and from his whole person emanates an aroma of goodness and kindness of heart which have ever been the characteristics of the man of whom Hector Malot, writing many years ago, said: "He is the best of best fellows;" of the man whom the frigid and reserved Alexandre Dumas loves like a brother, and who has not and never has had, in spite of his brilliant success, a single real enemy. His health troubles him, unfortunately. Of late his eyes have weakened, so that at times he is unable to

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guide his pen, and there are days when gastralgia martyrizes him. But he is as valiant as ever.

"I have written sixty-six volumes," he said, "and if God grants me life, I shall finish eighty."

Jules Verne lives on the Boulevard Longueville, at Amiens, at the corner of the Rue Charles Dubois, in a fine, spacious house, which he rents. It is a house of three stories, with three rows of five windows on the Boulevard Longueville and three windows at the corner, and three more on the Rue Charles Dubois. The carriage and other entrance are in this street. The windows on the Boulevard Longueville command a magnificent view of the picturesque, if misty, town of Amiens, with its old cathedral and other mediæval buildings. Right in front of the house, on the other side of the boulevard, is a railway cutting, which, just opposite Verne's study window, disappears into a pleasure ground, where there is a large music kiosk, in which during the fine weather the regimental band plays. This combination is to my thinking a very emblem of the work of the great writer: the rushing train, with all the roar and rattle of ultra-modernism, and the romance of the music. And is it not by a combination of science and industrialism with all that is most romantic in life that Verne's novels possess an originality which can be found in the works of no other living writer, not even amongst those of the men who count most in French literature?

THE RESIDENCE OF THE NOVELIST.

A high wall skirts the Rue Charles Dubois, and hides the courtyard and garden of Verne's house from the passer-by. When one has rung at the little side entrance and, in response to a great peal, the door has been opened, one finds himself in a paved courtyard. Opposite are the kitchen and offices; to the left may be seen a pleas-

VERNE'S HOUSE.

ant garden, well stocked with trees; and to the right is the house, to which a row of broad steps extending the whole length of the façade leads up. A conservatory filled with flowers and palms forms the entrance room, and passing through this the visitor enters the drawing-room. This is a richly furnished room, with marbles and bronzes, warm rich hangings, and the most comfortable of easy-chairs —the room of a man of means and leisure, but without any characteristic feature about it. It looks like a room which is little used, and this is the fact. Both Monsieur and Madame Verne are very simple people, who care nothing for show, and all for quiet and comfort. The adjoining large dining-room is rarely used, except when dinner parties are given or a family *fête* is held, and the novelist and his wife take their simple meals in a little breakfast-room which adjoins the kitchen. From the courtyard the visitor notices in the far corner of the house a lofty tower. The winding staircase which leads to the upper stories is in this tower, and at the very top of the staircase is M. Verne's private domain. A passage carpeted with red stuff, like the staircase, leads past maps and charts to a little corner room, which is furnished with a plain camp bedstead. Against a bay window stands a small table, on which manuscript paper very neatly cut may be seen. On the mantelpiece of the tiny fireplace stand two statuettes, one of Molière and the other of Shakespeare, and above them hangs a water-color painting representing a yacht steaming into the Bay of Naples. It is in this room that Verne works. Adjoining it is a large room with well-filled bookcases reaching from ceiling to carpet.

Speaking about his methods of work M. Verne said: "I rise every morning before five—a little later, perhaps, in the winter—and at five am at my desk, remaining at work till eleven. I work very slowly and with the greatest care, writing and rewriting until each sentence takes the form that I desire. I have always at least ten novels in my head in advance, subjects and plots thought out, so that, you see, if I am spared, I shall have no difficulty in completing the eighty novels which I spoke of. But it is over my proofs that I spend most time. I am never satisfied with less than seven or eight proofs, and correct and correct again, until it may be safely said the last proof bears hardly any traces of the original manuscript. This means a great sacrifice of pocket, as well as of time, but I have always tried my best for form and style, though people have never done me justice in this respect."

We sat together in the room of the Société Industrielle. On one side of M. Verne was a pile of proofs, "the sixth set," he said, and on the other a long manuscript, which I had looked at with interest, "but which," said the novelist, with his genial smile, "is merely a report which I am addressing to the municipal council of Amiens, of which I am a member. I take great interest in the affairs of the town."

I had asked M. Verne to tell me of his life and work, and he said that he would tell me of things that had never been told before. My first question was about his youth and home, and this is what he said:

"I was born in Nantes on the 8th of February, 1828, so that I am to-day in my sixty-sixth year, and it should be rather on my impressions of old age than on my souvenirs of childhood that I should be asked to speak. We were a most happy family. Our father, who was an admirable man, was a Parisian by birth, or, rather, by education, for he was born in Brie, but was educated in Paris, where he passed his university career and took his degree as a barrister. My mother was a Bas-Bretonne, from Morlaix, so that I am a mixture of Breton and Parisian blood."

These particulars are interesting from a psychological point of view, and assist one to understand the character of Jules Verne, who unites with the gayety and *savoir-vivre* and joy of life of the boulevardier—Claretie wrote about him, "He is a boulevardier to the tips of his fingers"—the love of solitude, the religiousness, and adoration of the sea, of the Breton.

"I had a very happy youth. My father was a solicitor and barrister at

Nantes, and in a good position of fortune. He was a man of culture, and of great literary taste. He wrote songs at a time when songs were still written in France, that is to say, between 1830 and 1840. But he was a man of no ambition, and, though he might have distinguished himself in letters had he chosen to put himself forward, he avoided all publicity. His songs were sung in the family; very few of them ever got into print. I may remark that none of us have been ambitious; we have tried to enjoy our lives and to do our work quietly. My father died in 1871, aged seventy-three. You see, he might have said, 'I was two years old when this century was born,' in distinction from Victor Hugo's famous remark about the date of his birth. My mother died in 1885, leaving thirty-two grandchildren, and, if one counts the cousins and cousins-german, ninety-seven descendants. All the children lived; that is to say, death has not removed any one of the five children. There were two boys and three girls, and they are all alive to-day. Men and women are of solid build in Brittany. My brother Paul was and is my dearest friend. Yes, I may say that he is not only my brother but my most intimate friend. And our friendship dates from the first day that I can remember. What excursions we used to take together in leaky boats on the Loire! At the age of fifteen there was not a nook or corner on the Loire right down to the sea that we had not explored. What dreadful boats they were, and what risks we, no doubt, ran! Sometimes I was captain, sometimes it was Paul. But Paul was the better of the two. You know that afterwards he entered the navy, and might have become a very distinguished officer had he not been a Verne—that is to say, had he had any ambition.

"I began to write at the age of twelve. It was all poetry then, and dreadful poetry, too. Still, I remember that an address which I composed for my father's birthday—what we call a 'compliment' in France—was thought very good, and I was so complimented that I felt quite proud. I remember that even at that time I used to spend a long time over my writings, copying and correcting, and never really satisfied with what I had done.

"I suppose that one may see in my love for adventure and the water, what was to be the bent of my mind in later years. Certainly, the method of work which I had then has clung to me all through my life. I don't think I have ever done a piece of slovenly work.

"No, I cannot say that I was particularly taken with science. Indeed, I never have been; that is to say, I have never practically studied or experimented in science. But while I was quite a lad I used to adore watching machines at work. My father had a country-house at Chantenay, at the mouth of the Loire, and near there is the government machine factory of Indret. I never went to Chantenay without entering the factory, and standing for hours together watching the machines at work. This taste has remained with me all my life, and to-day I have still as much pleasure in watching a steam-engine or a fine locomotive at work as I have in contemplating a picture by Raphael or Correggio. My interest in human industries has always been a marked trait of my character, as marked, indeed, as my taste for literature, of which I will speak anon, and my delight in the fine arts, which has taken me to every museum and picture-gallery; yes, I may say every picture-gallery of any importance in Europe. This Indret factory, our excursions on the Loire, and my scribbling of verses were the three delights and occupations of my youth.

HOW HE WAS EDUCATED.

"I was educated at the Lycée of Nantes, where I remained till I had finished my rhetoric classes, when I was sent to Paris to study law. My favorite study had always been geography, but at the time that I went to Paris I was entirely taken up with literary projects. I was greatly under the influence of Victor Hugo, indeed, very excited by reading and re-reading his works. At that time

I could have recited by heart whole pages of 'Notre Dame de Paris,' but it was his dramatic work that most influenced me, and it was under this influence that, at the age of seventeen, I wrote a number of tragedies and comedies, not to mention novels. Thus, I wrote a five-act tragedy in verse, entitled 'Alexander VI.,' which was the tragedy of the Borgia pope. Another five-act tragedy in verse, written at that time, was 'The Gunpowder Plot,' with Guy Fawkes as hero. 'A Drama under Louis XV.' was another tragedy in verse, and for comedy there was one in five acts and verse called 'Les Heureux du Jour.' All this work was done with the greatest care and with a constant preoccupation after style before me. I have always sought after style, but people have never given me credit for this.

"I came to Paris as a student just about the time when the grisette and all that she meant was disappearing from the Latin quarter. I cannot say that I frequented many of my fellow-students' rooms, for we Bretons, you know, are a clannish people, and nearly all my friends were schoolmates from Nantes, who had come up to the Paris University with me. My friends were nearly all musicians, and at that period of my life I was a musician myself. I understood harmony, and I think that I may say that, if I had taken to a musical career, I should have had less difficulty than many in succeeding. Victor Masse was a friend of mine as a student, and so was Delibes, with whom I was very intimate. We used to say 'thou' to each other. These were friends I made in Paris. Amongst my Breton friends was Aristide Hignard, a musician, who, although he won a second Prix de Rome, never emerged from the crowd. We used to collaborate together. I wrote the words and he the music. We produced one or two operettes which were played, and some songs.

"One of these songs, entitled 'Les Gabiers,' which used to be sung by the baritone Charles Bataille, was very popular at the time. The chorus, I remember, was:

"'Alerte,
Alerte, enfants, alerte,
Le ciel est bleu, la mer est verte,
Alerte, alerte.'

"Another friend whose acquaintance I made as a student, and who has remained my friend ever since, is Leroy, the present deputy for Morbihan. But the friend to whom I owe the deepest debt of gratitude and affection is Alexandre Dumas the younger, whom I met first at the age of twenty-one. We became chums almost at once. He was the first to encourage me. I may say that he was my first protector. I never see him now, but as long as I live I shall never forget his kindness to me nor the debt that I owe him. He introduced me to his father; he worked with me in collaboration. We wrote together a play called 'Pailles Rompues,' which was performed at the Gymnase; and a comedy in three acts entitled 'Onze Jours de Siège,' which

was performed at the Vaudeville Theatre. I was living then on a small pension allowed me by my father, and had dreams of wealth which led me into one or two speculations at the Bourse. These did not realize my dreams, I may add. But I derived some benefit from constant visits to the *coulisses* of the Bourse, for it was there that I got to know the romance of commerce, the fever of business, which I have often described and used in my novels.

"Whilst speculating at the Bourse, and collaborating with Hignard in operette and chanson, and with Alexandre Dumas in comedy, I contributed short stories to the magazines. My first work appeared in the 'Musée des Familles,' where you can find a story of mine about a madman in a balloon, which is the first indication of the line of novel that I was destined to follow. I was then secretary to the Lyric Theatre, and afterwards secretary to M. Perrin. I adored the stage and all connected with it, and the work that I have enjoyed the most has been my writing for the stage.

THE BEGINNING OF LITERARY SUCCESS.

"I was twenty-five when I wrote my first scientific novel. That was 'Five Weeks in a Balloon.' It was published by Hetzel in 1861, and was a great success at once."

I here interrupted M. Verne and said: "I want you to tell me how you wrote that novel, and why, and what preparation you made for it. Had you any knowledge of ballooning, any experience?"

"None whatever," replied M. Verne. "I wrote 'Five Weeks in a Balloon,' not as a story about ballooning, but as a story about Africa. I always was greatly interested in geography and travel, and I wanted to give a romantic description of Africa. Now, there was no means of taking my travellers through Africa otherwise than in a balloon, and that is why a balloon is introduced. At that time I had never made an ascent. Indeed, I have only once travelled in a balloon in my life. That was at Amiens, long after my novel was published. It was only 'three-quarters of an hour in a balloon,' for we had a mishap in starting. Godard, the aëronaut, was kissing his little boy just as the balloon rose, and we had to take the lad with us, and the balloon was so weighted that it could not go far. We sailed as far as Longeau, the junction you passed on your way here. I may say that at the time I wrote that novel, as now, I had no faith in the possibility of ever steering balloons, except in an absolutely stagnant atmosphere, as in this room, for instance. How can a balloon be made to face currents running at six, seven, or eight metres to the second? It is a mere dream, though I believe that if the question is ever to be solved it will be with a machine which will be heavier than the air, following the principle of the bird, which can fly, though it is heavier than the air which it displaces."

"Then you had no scientific studies to go upon?"

"None whatever. I may say that I have never studied science, though in the course of my reading I have picked up a great many odds and ends which have become useful. I may tell you that I am a great reader, and that I always read pencil in hand. I always carry a notebook about with me, and immediately jot down, like that person in Dickens, anything that interests me or may appear to be of possible use in my books. To give you an idea of my reading, I come here every day after lunch and immediately set to work to read through fifteen different papers, always the same fifteen, and I can tell you that very little in any of them escapes my attention. When I see anything of interest, down it goes. Then I read the reviews, such as the 'Revue Bleue,' the 'Revue Rose,' the 'Revue des Deux Mondes,' 'Cosmos,' Tissandier's 'La Nature,' Flammarion's 'L'Astronomie.' I also read through the bulletins of the scientific societies, and especially those of the Geographical Society, for, mark, geography is my passion and my study. I have all Reclus's works—I have a great admiration for Élisée Reclus—and the whole of Arago. I also read

and re-read, for I am a most careful reader, the collection known as 'Le Tour du Monde,' which is a series of stories of travel. I have thus amassed many thousands of notes on all subjects, and to-day, at home, have at least twenty thousand notes which can be turned to advantage in my work, as yet unused. Some of these notes were taken after conversations with people. I love to hear people talk, provided they talk on subjects with which they are acquainted."

"How could you do what you have done without scientific study of any kind?"

"I had the good fortune to enter the world at a time when there were dictionaries on every possible subject. I had just to turn up in my dictionary the subject I wanted information upon, and there it was. Of course, in my reading, I picked up a quantity of information, and, as I said, I have a great number of scientific odds and ends in my head. It was thus that, when, one day in a Paris café, I read in the 'Siècle' that a man could travel round the world in eighty days, it immediately struck me that I could profit by a difference of meridian and make my traveller gain or lose a day in his journey. There was my dènouement ready found. The story was not written until long after. I carry ideas about in my head for years—ten or fifteen years, sometimes—before giving them form.

"My object has been to depict the earth, and not the earth alone, but the universe, for I have sometimes taken my readers away from the earth, in the novel. And I have tried at the same time to realize a very high ideal of beauty of style. It is said that there can't be any style in a novel of adventure, but that isn't true; though I admit that it is very much more difficult to write such a novel in a good literary form than the studies of character which are so in vogue to-day. And let me say"—here Jules Verne slightly raised his broad shoulders—"that I am no very great admirer of the psychological novel, so-called, because I don't see what a novel has to do with psychology, and I can't say that I admire the so-called psychological novelists. I except, however, Daudet and De Maupassant. For De Maupassant I have the very highest admiration. He is a man of genius, who has received from heaven the gift of writing everything, and who produces as naturally and easily as an apple-tree produces apples. My favorite author, however, is, and always has been, Dickens. I don't know more than a hundred words of English, and so have had to read him in translation. But I declare to you, sir"—Verne laid his hand upon the table with emphasis—"that I have read the whole of Dickens at least ten times over. I cannot say that I prefer him to De Maupassant, because there is no comparison possible between the two. But I love him immensely, and in my forthcoming novel, 'P'tit Bonhomme,' the proof of this is given and acknowledgment of my debt is made. I am also and have always been a great admirer of Cooper's novels. There are fifteen of these which I consider immortal."

THE SELF-DISSATISFACTION OF GENIUS.

Then, speaking as though musing aloud, Verne added: "Dumas used to say to me, when I complained that my place in French literature was not recognized, 'You ought to have been an American or an English author. Then your books, translated into French, would have gained you enormous popularity in France, and you would have been considered by your countrymen as one of the greatest masters of fiction.' But as it is, I am considered of no account in French literature. Fifteen years ago Dumas proposed my name for the Academy, and, as at that time I had several friends in the Academy, Labiche, Sandoz, and others, there seemed a chance of my election and the formal recognition of my work. But it was never carried through, and to-day, when I get letters from America addressed to 'M. Jules Verne of the French Academy,' I have a little smile to myself. Since the day when my name was proposed, no less than forty-two elections have occurred at the French Academy, which, so to speak,

has entirely renovated itself since then. But I am passed over."

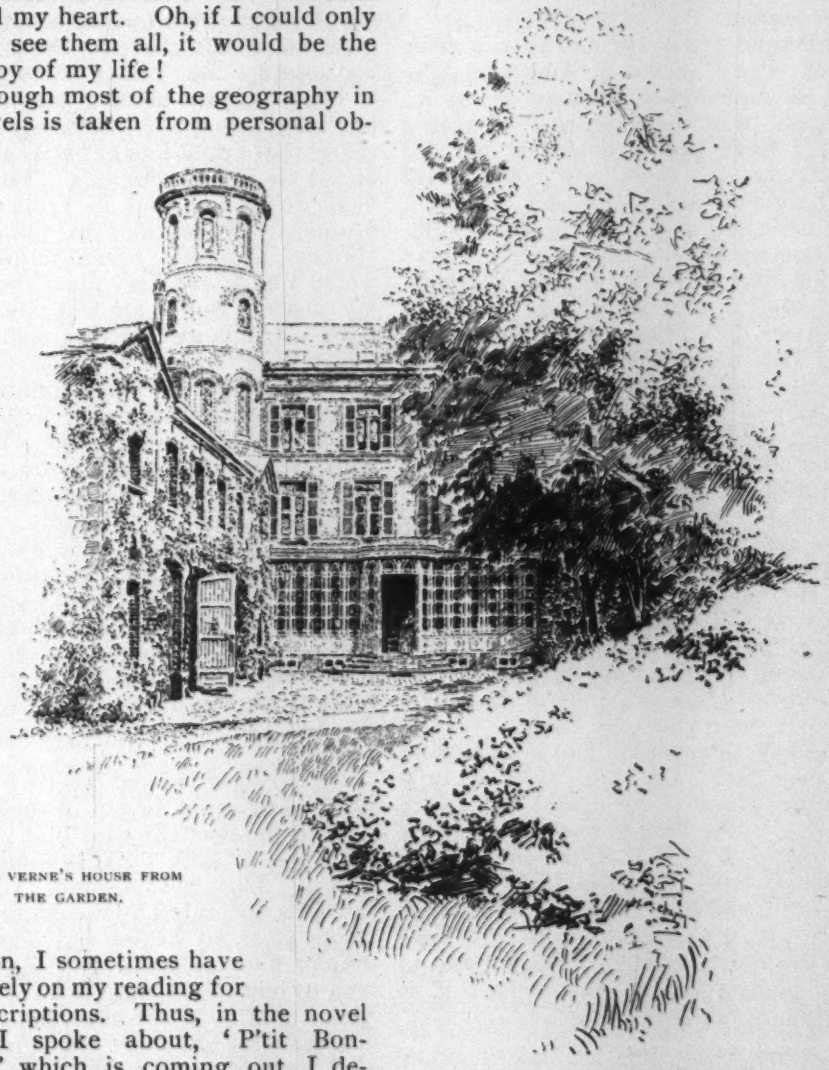
It was then that M. Verne said those words, which, for the pregnancy of their import, I have placed at the head of this account.

To change the subject, I asked the master to speak of his travels, and he said: "I have yachted for my pleasure, but always with an eye to getting information for my books. This has been my constant preoccupation, and every one of my novels has benefited by my voyages. Thus, in 'Le Billet de Loterie' is to be found the narrative of personal experiences and observations in a tour in Scotland and to Iona and Staffa; as also of a journey in Norway in 1862, when we travelled from Stockholm to Christiania by canal, mounting ninety-seven locks, an extraordinary voyage of three days and three nights in a steamer, and when we took carriage to that wildest part of Norway, the Tolemark, and visited the Gosta falls, nine hundred feet high. In 'Les Indes Noires' is the relation of my tour in England and my visit to the Scotch lakes. 'Une Ville Flottante' came from my voyage to America in 1867, on the Great Eastern, when I sailed for New York, visited Albany and Niagara, and had the great good fortune and joy to see Niagara icebound. It was on April 14, and there were torrents of water pouring into the open jaws of ice. 'Mathias Sandorff' comes from a tour from Tangiers to Malta on my yacht, the 'St. Michel,' called after my son Michel, who accompanied me, with his mother and my brother Paul, on the voyage. In 1878 I had a very instructive and most pleasant yachting tour with Raoul Duval, Hetzel the younger, and my brother, in the Mediterranean. Travelling was the pleasure of my life, and it was with great regret that, in 1886, I was forced to give it up, in consequence of my accident. You know the sad story of how a nephew of mine, who adored me, and of whom I was also very fond, came to see me at Amiens one day, and, after muttering something wildly, drew a revolver and fired at me, wounding me in the left leg and laming me for life. The wound has never closed and the bullet has never been removed. The poor lad was out of his mind, and said that he had done this in order to draw attention to my claims to a seat in the French Academy. He is now in an asylum, and I fear that he will never be cured. The great regret that this causes me is chiefly that I shall never be able to see America again. I should so have liked to have gone to Chicago this year, but in the

state of my health and with this ever-open wound it was quite impossible. I do so love America and the Americans. As you are writing for America be sure to tell them that if they love me—as I know they do, for I receive thousands of letters every year from the States—I return their affection with all my heart. Oh, if I could only go and see them all, it would be the great joy of my life!

"Though most of the geography in my novels is taken from personal observation, I sometimes have had to rely on my reading for my descriptions. Thus, in the novel which I spoke about, 'P'tit Bonhomme,' which is coming out, I describe the adventures of a lad in Ireland. I take him from the age of two and give his life up to the age of fifteen, when he makes his fortune and that of all his friends, which is a novel dénouement, is it not? He travels all round Ireland, and, as I have never visited Ireland, my descriptions of the scenery and localities have been taken from books.

"I have books ahead for years. The next novel, that is to say, the one that will be published next year, is entitled 'Les Aventures Mirifiques de Maître Antifer,' and is entirely finished. It is a story of treasure-seeking and finding, and the plot turns on a very curious geometrical problem. I am now yoked to the novel which will appear in 1895, but I can't say anything about it, as it is not yet in any kind of shape. Between times I write short stories. Thus, in the next



JULES VERNE'S HOUSE FROM THE GARDEN.

Christmas number of the 'Figaro' there will be published a tale of mine entitled 'Monsieur Rediez et Mademoiselle Mibemol' (Rediez and Mibemol, as you know, are exactly the same notes on a piano). You see the drift? There my musical knowledge came in play. Nothing that one has learned is ever wasted.

"People often ask me, as you have done, why I reside in Amiens, I, who am so thoroughly Parisian in my instincts. Well, because, as I have told you, I have Breton blood in me, and love calm and quiet, and could never be happier than in a cloister. A quiet life of study and work is my delight. I came to Amiens first in 1857, where I met the lady who is now my wife, and who at that time—her name was Madame de Vianne—was a widow with two little daughters. Family ties and the quiet of the place have bound me to Amiens ever since. It is a good thing, for, as Hetzel said to me the other day, if I had lived in Paris I should have written at least ten novels less than I have done. I enjoy my life here very much. I have told you how I work in the mornings and how I read in the afternoons. I take as much exercise as I can. That has been the secret of health and strength. And I continue very fond of the theatre; and whenever there is a play at the little theatre here you may be sure to find Madame Jules Verne and her husband in their box. On those days we dine at the Hotel Continental, so as to have a little outing and to give our servants a rest. Our only child, Michel, lives in Paris, where he is married and has children. He writes ably on scientific subjects. I have only one pet; you have his portrait in the photograph of my house; it is Follet, my dear old dog."

AN UNDERPAID WRITER.

I then asked M. Verne a question which, though indiscreet, seemed necessary. I had heard that the income received by him from his wonderful books has been less than that earned by an ordinary journalist. I had heard it stated on the very best authority that Jules Verne, taking an average, had never earned more than five thousand dollars a year. M. Verne said: "I would rather say nothing about that. It is true that my first books, including my most successful ones, were sold for a tithe of their value; but after 1875, that is to say, after 'Michel Strogoff,' my arrangements were altered and gave me a fair share of the profits of my novels. But I have no complaints to make. All the better if my publisher has made money too. Certainly I might regret that I didn't make better arrangements for my productions. Thus, 'Le Tour du Monde' has in France alone produced ten millions of francs, and 'Michel Strogoff' seven millions, of which I have had very much less than my share. But I am not and never have been a money-getting man. I am a man of letters and an artist, living in the pursuit of the ideal, running wild over an idea, and glowing with enthusiasm over my work, and when my work is done, putting it aside and forgetting all about it so completely that I often sit down in my study and pick up a novel by Jules Verne and read it with enjoyment. A little more justice to me from my countrymen would have been prized by me a million times more than the thousands of dollars which my books should have given me more than they did give me each year. That is what I regret and always shall regret."

I glanced at the red rosette of officer of the Legion of Honor in the buttonhole of the master's easy blue jacket.

"Yes," he said, "that is some recognition." Then, with a smile, "I was the last man decorated by the empire. Two hours after my decree was signed, the empire had ceased to be. My promotion to officer was signed in July of last year. But it is not decorations that I hanker after any more than gold. It is that people should see what I have done or tried to do, and should not overlook the artist in the tale-teller. I am an artist," repeated Jules Verne, drawing himself up and setting his foot sturdily down on the carpet.

"I am an artist," said Jules Verne. America, as long as she reads, will echo him.

GLIMPSES OF WHITTIER'S FAITH AND CHARACTER,

THROUGH EXTRACTS FROM UNPUBLISHED LETTERS.

By Charlotte Fiske Bates.

THE wisdom of Lord Bacon found no higher reach than in the utterance: "It is heaven upon earth to have a man's mind move in charity, rest in Providence, and turn upon the poles of truth." If ever a mind did thus *move* and *rest* and *turn*, it was Whittier's, and he thus found a heaven upon earth, as it were, for himself, and helped others find it.

In transcribing for the public eye the following selections from the poet's personal letters, there is no sense of violating a friendly trust, but rather of reverently confirming, through Mr. Whittier's familiar prose, the sentiments everywhere visible in his poetry. Many, too, admiring his character, but having little taste for even the best verse, may thus read the one partial expression of his thought and feeling without having read the other.

The letters bridge the space between 1879 and 1892; but little pains will be taken to note the date, unless it have connection with the quoted passage. The following was penned in the summer of 1879, in reply to a letter expressing my own faith and doubt. Both Mr. Whittier and I had intense sympathy with the mental experience of Charles Lamb, as given with such fascinating naturalness in his "Letters."

. . . "I suppose nine out of ten of really thoughtful people, were they to express their real feeling, would speak much as thee* do, of the mingled 'dread and longing' with which they look forward to the inevitable surrender of life. Of course, temperament and present surroundings have much influence with us. There are some self-satisfied souls who, as Charles Lamb says, 'can stalk into futurity on stilts,' but there are more Fearings and Despondencys than Greathearts in view of the 'loss of all we know.'

"I have heard Garrison talk much of his faith in Spiritualism. He had no doubts whatever, and he was very happy. Death was to him but the passing from one room to another and higher one. But his *facts* did not convince me. I am slow to believe new things, and in a matter of such tremendous interest, I want 'assurance doubly sure.' I wonder whether, if I could see a real ghost, I should believe my own senses. I do sometimes feel very near to dear ones who have left me—perhaps they are with me then. I am sure they would be, if it were possible.

"Of one thing I feel sure: that something outside of myself speaks to me, and holds me to duty; warns, reproves, and approves. It is good, for it requires me to be good; it is wise, for it knows the thoughts and intents of the heart. It is to me a revelation of God, and of his character and attributes: the one important *fact*, before which all others seem insignificant.

"I have seen little or nothing of what is called Spiritualism: I do not think its fruits have always been good; but the best things may be abused and counterfeited. I wish there were a possibility of knowing what it really is."

"I entirely sympathize with thee and dear Charles Lamb. I have no longer youth and strength, and I have not much to hope for, as far as this life is concerned; but I enjoy life: 'It is a

* As Whittier never used *thou*, but *thee*, instead, as a nominative, I have retained just that.

pleasant thing to behold the sun.' I love nature in her varied aspects; and, as I grow older, I find much to love in my fellow-creatures, and also more to pity. I have the instinct of immortality, but the conditions of that life are unknown. I cannot conceive what my own identity and that of dear ones gone before me will be. And then the unescapable sense of sin in thought and deed, and doubtless some misconception of the character of God, makes the boldest of us cowards. Does thee remember the epitaph-prayer of Martin Elginbrod?

"'Here lie I, Martin Elginbrod,
Have pity on my soul, Lord God,
As I wad do were I Lord God
An' ye were Martin Elginbrod.'

"I think there is a volume of comfort in that verse. We Christians seem less brave and tranquil, in view of death, than the old Stoic sages. Witness Marcus Antoninus. I wonder if the creed of Christendom is really the 'glad tidings of great joy to all people' which the angels sang of. For myself, I believe in God as Justice, Goodness, Tenderness,—in one word, Love: and yet, my trust in Him is not strong enough to overcome the natural shrinking from the law of death. Even our Master prayed that that cup might pass from Him, 'if it were possible.'"

What was noticeable in Mr. Whittier's conversation, is everywhere perceptible in his writings, and shows itself equally in his letters, is his transparency of character. He took no pains to conceal his real feeling or opinion; conscious of the supreme desire to *be* after the Master's pattern, he did not concern himself unduly with the *seeming*, nor gloss over his human side of occasional doubt or fear or weakness, by pretending that his mind was never shadowed by it. Always exultant over temporary questionings, ever rising triumphantly on the wings of Faith out of the dark of Doubt, his power over the minds of men lay, and lies, in his utter truthfulness—his sincere revelation of the twofold workings of his own spirit. That he found, in his few-worded faith, all needed strength for meeting the emergencies of his signal life, and, at last, for facing death with perfect calmness, resignation, and a sublime trust—*this* is the best and most convincing proof of the conquering efficacy of that simple faith, and an encouragement to those who, despite all efforts, find themselves often in the dark concerning the great problems of life and death.

As regards the *epitaph-prayer*, it had long been as great a favorite with me as with Whittier; and I have felt that George Macdonald, when writing "David Elginbrod" and "Robert Falconer," was really doing more to put the Almighty in His true character before men than one-half of the clergy from their pulpits.

The year 1879 brought us the loss of W. L. Garrison, the noble reformer, and Bayard Taylor, the famous poet and traveller. Both were close friends of Whittier, and in a March letter of this year, he writes: "Poor Bayard was buried ten days ago, in the old Quaker burial-ground of Longwood. How many of my life-companions have so dropped out of sight! And they make no sign! But the dear God has not mocked us with the hopes of immortality. I *feel* it rather than hope it; and believe, in spite of all the speculations and materialities of the day."

Again, in a May letter of 1879: "I have been waiting sadly for some days to hear of the departure of my dear and early friend Garrison; and now it is announced. From the right hand and the left, one by one, almost all my old friends have dropped out of the journey of life:

"'Like clouds that rack the mountain summits,
Like waves that know no guiding hand,
So swift has brother followed brother
From sunshine to the Sunless Land.'

"Where they are, and how they are, I would be glad to know, but I have a fixed faith that it is well with them. They are in His hands who can have no motive to do otherwise than the best that is possible for them and for us all."

A little later Mr. Whittier's large yet simple faith is thus forcibly and char-

acteristically expressed: "My difficulty is not from doubt of the future life. I can conceive of no end to myself. I expect to live on, but *how?* I have a constitutional dread of change and newness. But I have a fixed faith in the goodness of God, in the wisdom and benign tenderness of His love, *in all worlds and lives;* and in my weakness and darkness I lean heavily upon Him. I am but too sensible of frailties and sins. I have no consciousness of loving God as a person or power, apart from His attributes. I have no experience of ecstatic emotions, but I know that I love goodness and mercy, charity and peace; that my soul longs for harmony and moral symmetry; that I would sooner wrong myself than my neighbor; and, at times, the sweet sense of an infinite love overwhelms me and fills me with gratitude and thanksgiving."

He himself did not underline the words, "*in all worlds and lives;*" but I have emphasized them in added proof of all that his poetry offers of his faith in the everlasting love and mercy of God towards *all* men.

It may not be universally known that Whittier's mother was spared him till he was fifty: his love for her, and devotion to her welfare, were memorable. The following letter was, therefore, I well knew, written right out of his heart and experience:

"I have just received thy note informing me of thy mother's departure. I will not trouble thee with words. I know what the great, inevitable bereavement is, and the unspeakableness of the change and separation. But my deepest sympathy is with thee. It is a great satisfaction to thee, I am sure, that thee was able to be with thy mother and minister to her to the last. It is so in my own case; it is ever a cause of thankfulness that I could be with my mother during her long years of decline and illness. I trust I shall meet her ere long. It *must* be so, or life is a delusion and mockery. My faith is strong. Sometimes a momentary feeling of doubt passes over me, like the shadow of a bird between me and the sunshine, but it passes quickly, and makes no impression. As Browning says, 'I believe in God and the soul.'

"God bless thee, my friend, in thy trial. 'Lean hard on Him,' the Infinite Good."

One could not conceive a fitter image of transient doubt than Whittier uses in this letter: "*like the shadow of a bird between me and the sunshine.*" Yes, only as flitting as that was the intercepting of the divine light; and, in Whittier's case, the bird was a lark, that sang hopefully even while casting the shadow.

Remembering that the very name of the sect to which Whittier belonged is, as it were, a synonym for *peace*, do we realize at what great cost of spiritual pain he must have stood out so heroically for freedom, even though it had to be bought with strife? It was hard enough to be true to one's convictions in face of so much opposition in the state; but, added to that, in his case, was the sense of finding himself bound, through overwhelming conviction of duty, to uphold a measure at variance with the traditional and time-established character of his faith; and utterly so with his own gentle, peace-loving nature. In a letter written at the close of 1881, he says: "I have just been looking over thy admirably selected 'Voices of Sympathy' from our dear Longfellow. I wish thee could do something of the kind for me—as regards the milder and religious poems—not those which suggest 'The sword of the Lord and of Gideon.'" That last sentence was to me a revelation of the fact that he wished, since the war-poems had answered the end of the awful crisis in which they were written, to sheathe them, as it were, in the scabbard of peace; at any rate, to have prominence given to those poems which are rife with Faith, Hope, and Charity; *that* being the name he had chosen for the compilation, had the publishers favored its issue.

From another letter of 1881 the following is taken: "Will another year be given me? In any case, it must be but to enjoy as far as possible the present, with a grateful and reverent trust for the future, and to do what little good one can; 'be kind in word

and deed,' and pray 'without ceasing,' for our best strength is weakness."

Mr. Whittier loved the sights and sounds of nature with the ardor of Wordsworth; and there is a charming touch of the human in the way he clings to them:

"I am very thankful that I can almost forget age and infirmity in the contemplation of these lovely dawns and sunsets, and these still, warm, pictureful noons. Shall we have them or their like in the new life? If not, I, for one, must miss them sadly. But His will be done."

Again, in a June letter of this year:

"It seems to me the world was never so beautiful as now, when I am about to leave it. But, no doubt, the infinite possibilities of the future life will more than compensate for the loss of this."

Whittier, like Longfellow, was very generous in his valuation of contemporaries, and praised them without the thieving help of *ifs* and *buts*.

On one occasion, a tributary paper to Longfellow appearing on his birthday, and Whittier through some mischance not having been apprised of its preparation, he wrote:

"It would have given me great pleasure to take part in it: he [Longfellow] has no warmer admirer than myself."

In reference to Holmes:

"He deserves all honor; and, besides, is a dear old personal friend." And again, in a paragraph of another letter, he rejoices in the honors bestowed on Dr. Holmes while abroad.

All who knew Mr. Whittier will attest his unfailing love and loyalty towards the Friends, whose quarterly meetings he continued to attend to the very last. In a May letter of 1884, he thus writes: "Next week our annual Friends' meeting comes off at Amesbury, where I hope to see a good many old and dear friends of our faith. I am not much of a sectarian, and care little for creeds, but I like to hear the Quaker speech, and see the Quaker dress. My heart 'warms to the tartan.'"

At the close of the following passage from a letter written in March, 1884, there is a quaint and just remark on the present way of living:

"Mrs. —— is very ill, over-worked, and suffering from nervous exhaustion. We all work too hard; we are hurried, excited; all trying to answer the Sphinx's questions; all afraid of 'Mrs. Grundy;' we run over *religion*, *politics*, *charities*, by steam and electricity. The old Friends used to dwell upon the need of 'getting into the quiet.' There seems now no quiet to get into!"

I have heard Mr. Whittier, true and great poet as he was, say that he never felt fully satisfied with anything that he wrote. He had, too, little or no concern as to posthumous fame; and, indeed, in mature life, at least, hardly any regard for present renown, in itself considered. To do good, to bring the hearts of ailing humanity into sympathy with his own, to liberalize and lift into the free air of divine love and noble service, these were his aims. As for the rest, his innate impulse to song was so strong, his love of nature and beauty so overmastering, that he could not help being a poet as well as philanthropist.

Having quoted to Mr. Whittier an opinion of the late Dr. Hudson, the Shakespearian scholar, as to the *permanency* of his work, he replied: "I am glad so competent an authority favorably regards my writings. But it isn't much matter whether they live longer or shorter. They have brought me dear friends while *I* live, and that is enough, and I am very grateful for it." In 1881 he wrote: "I send thee my little book. . . . I don't know of any reason I had for publishing it, save a yearning desire to speak to my friends once more."

Referring to desire for fame: "I had it strongest," he said, in the same letter, "when I had no hope of it; and what I have attained, has its drawbacks in the uncomfortableness of notoriety, in the necessity of keeping up to the standard of one's reputation, and, most of all, in the feeling that you don't really deserve what you get — that, unwittingly, you pass for more than you are worth. If I ever feel like

envying any one, it is not the world-famous author, but some serene, devout soul who has made the life of Christ his own, and whose will is the divine will." What a beautiful revelation of *his* devout soul, found in the very person of a world-famous author!

Near the close of 1889 Mr. Whittier wrote: "I am still mostly confined to the house, and suffer much from pain and weakness. Whether I shall see another summer is, of course, very doubtful. All as God wills. His mercy and goodness have followed me through life, and I feel that I can trust Him in the future.

"I had a quiet birthday, so far as visitors are concerned; I had many kind messages and gifts, and some two or three hundred letters, which my poor sight makes it impossible to answer as I could wish."

This I find in a summer letter of 1890: "I scarcely know what is going on in the world. My eyes will not allow of much use. I can't look over the newspapers, and this planet of ours must wag on as it pleases, for all I can do. I am only just waiting to hear the call to leave it." He was spared to bless it, thank God! more than two years thereafter.

The last letter received from Mr. Whittier was written in the April of 1892, and just after a three months' struggle with the *grippe*. In it is a touch of his old playfulness: "It has left me very weak, but I am thankful that I am gaining daily. The Irishman's description of the *grippe*, 'That he was deadly sick for three weeks after he was entirely well,' is confirmed by my own experience.

"My eyes fail me a good deal, and I can use them only for a brief letter, just to tell thee that I am glad to hear from thee, and that I am always affectionately thy friend,

"JOHN G. WHITTIER."

Yea! faith, life, song, most meetly named him *Friend:*
All men's he was and is, till time shall end;
And, in the Christ-path he so closely trod
That all men saw, he was the friend of God!

"WITH WHOM IS NO VARIABLENESS, NEITHER SHADOW OF TURNING."*

BY ARTHUR HUGH CLOUGH.

IT fortifies my soul to know
That, though I perish, Truth is so;
That, howsoe'er I stray and range,
Whate'er I do, Thou dost not change.
I steadier step when I recall
That, if I slip, Thou dost not fall.

* By permission from "The Poems and Prose Remains of Arthur Hugh Clough," Macmillan & Co., New York and London.

THE GREAT WHITE CHIEF

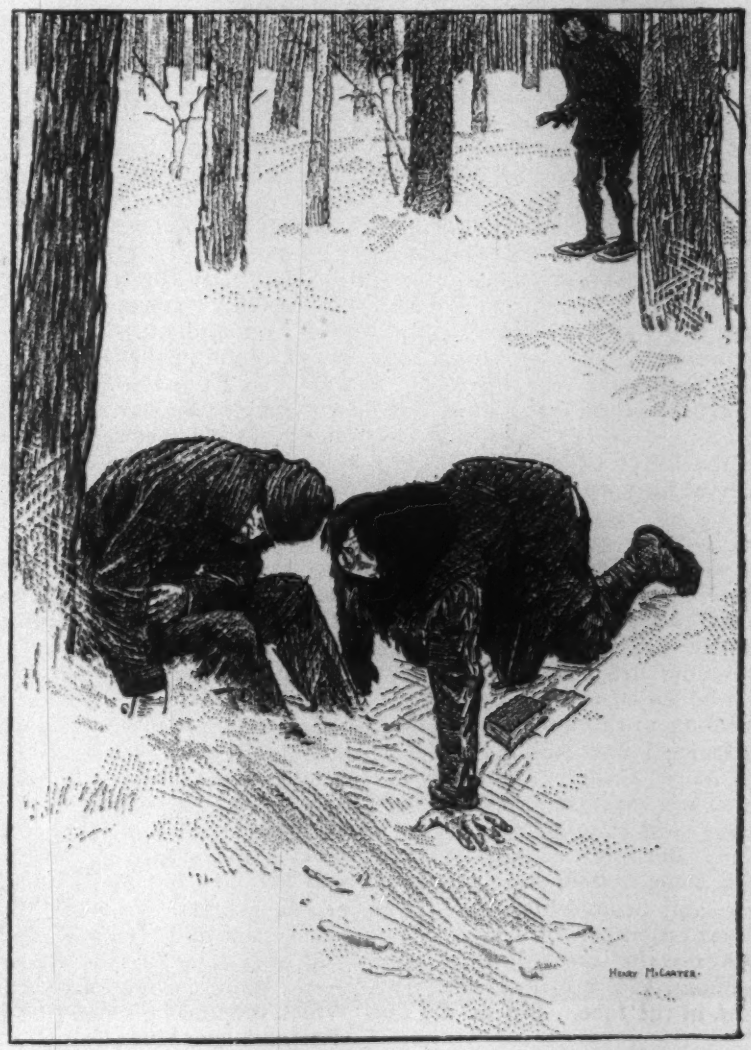
BY GILBERT PARKER

THE old woodman shifted the knife with which he was mending his fishing-rod from one hand to the other, and looked at it musingly, before he replied to Medallion. "Yes, monsieur, I knew the White Chief, as they called him: this was his"—holding up the knife; "and this"—taking a watch from his pocket. "He gave them to me; I was with him in the Circle on the great journey."

"Tell us about him, then," Medallion urged; "for there are many tales, and who knows which is the right one?"

"The right one is mine. Holy, he was to me like a father—then! I know the truth." He paused a moment, looking out on the river where the hot sun was playing with all its might, then took off his cap with deliberation, laid it beside him, and speaking as it were into the distance, began:

"He had been a trader of the Hudson's Bay Company. Of his birth some said one thing, some another; I know he was *beaucoup gentil*, and his heart, it was a lion's! Once when there was trouble with the Chipp'ways he went alone to their camp, and said he would fight their strongest man, to stop the trouble. He twisted the neck of the great fighting man of the tribe, so that it went with a snap, and that ended it: and he was made a chief—for, you see, in their hearts they all hated their strong man. Well, one winter there came down to Fort o' God two Esquimaux, and they said that three white men were wintering by the Coppermine River; they had travelled down from the frozen seas when their ship was locked in the ice, but could get no farther. They were sick with the evil skin, and starving. The White Chief said to me: 'Galloir, will you go?' I would have gone with him to the ends



of the world—and this was near one end."

The old man laughed to himself, tossed his jet-black hair from his wrinkled face, and, after a moment, continued: "There never was such a winter as that. The air was so still by times that you could hear the rustle of the stars and the shifting of the northern lights; but the cold at night caught you by the heart and clamped it—*Mon Dieu!* how it clamped it! We crawled under the snow and lay in our bags of fur and wool, and the dogs hugged close to us. We were sorry for the dogs; and one died, and then another, and there was nothing so dreadful as to hear the dogs howl in the long night—it was like the cries of ghosts in an empty world. The circle of the sun got smaller and smaller, till he only travelled along the high edge of the northwest. We got to the river at last, and found the camp. There was one man dead—only one; but there were bones—ah, monsieur, you not guess what a thing it is to look upon the bones of men, and know *that*——!"

Medallion put his hand on the old man's arm. "Wait a minute," he said. Then he poured out coffee for both, and they drank before the rest was told.

"It's a creepy story," said Medallion, "but go on."

"Well, the White Chief looked at the dead man as he sat there in the snow, with a book and a piece of paper beside him, and the pencil in the book. The face was bent forward to the knees. The White Chief picked up the book and pencil, and then knelt down and peered up in the dead man's face, all hard like stone and crusted with frost. I thought he would never stir again, he looked so long. I think he was puzzled. Then he turned and said to me: 'So quiet, so awful, Galloir!' and got up. Well, but it was cold then, and my head seemed big and running about like a ball of air. But I lighted a spirit-lamp, and made some coffee, and he opened the book and began to read. All at once I heard a cry, and I saw him drop the book on the ground, and go to the dead man and jerk his fist as if to strike him in the face. But he did not strike."

Galloir stopped, and lighted his pipe, and was so long silent that Medallion had to jog him into speaking. He puffed the smoke so that his face was in the cloud, and he said through it: "No, he did not strike. He got to his feet, and spoke: 'Ah, *Jésu, pardon!*' like that! and come and took up the book again, and read. He eat and drunk, and read the book again, and I knew by his face that something more than cold was clamping his heart.

"'Shall we bury him in the snow?' I said. 'No,' he spoke, 'let him sit there till the judgment. This is a wonderful book, Galloir,' he went on. 'He was a brave man, but the rest!—the rest!'—then under his breath almost: 'She was so young—but a child.' I not understand that. We started away soon, leaving the thing there: for four days, and then I saw that the White Chief would never get back to Fort Pentecost; but he read the dead man's book much. . . .

"I cannot forget that one day. He lay looking at the world—nothing but the waves of snow, shining blue and white, on and on. The sun lifted an eye of blood in the north, winking like a devil as I tried to drive Death away by calling in his ear. He waked all at once; but his eyes seemed asleep. He told me to take the book to a great man in Montreal—he give me the name. Then he took out his watch—it was stopped—and this knife, and put them into my hands, and then he pat my shoulder. He motioned to have the bag drawn over his head. I did it. . . . Of course that was the end!"

Galloir took out the watch and turned it round in his hand, held it to his ear, and gave a silent little laugh. "Eh, that was a good watch."

"But what about the book?" Medallion asked.

"That book? It was strange. I took it to the man in Montreal—*Tonnere!* What a fine house and good wine had he!—and told him all. He whipped out a scarf, and blew his nose loud, and said very angry: 'So, she's lost both now. What a scoundrel he was! . . .' Which one did he mean? I do not understand ever since."

"HUMAN DOCUMENTS."

HENRY RIDER HAGGARD, born in Norfolk, England, June 22, 1856, had employment for four years, from 1875 to 1879, in the colonial service in South Africa, and he has been much helped by this experience in the literary work which is his chief distinction. His first book, published in 1882, dealt directly with South African politics. Two years later he published his first novel, "Dawn." "The Witch's Head" followed in 1885, and in 1886 "King Solomon's Mines," by which his great popularity was established. Then came, at about yearly intervals, "She," "Jess," "Allan Quatermain," "Colonel Quaritch, V. C.," "Cleopatra," and others. Mr. Haggard is by profession a lawyer, but professionally he does little beyond administering the office of justice of the peace in the county of Norfolk, where he has an attractive country home. Literature is his principal employment, and to it he devotes himself with great patience and method. Of his patience one may get an idea from the story lately told by himself of the writing of his first novel: "How to compose a novel I knew not; so I wrote straight on, trusting to the light of nature to guide me. I worked very hard at this novel during the next six months or so."

JEAN MARTIN CHARCOT, at the time of his death, August 15, 1893, had come into preëminent mastery of the subject of diseases of the brain and nervous system. Lecturing and writing copiously and weightily on his specialty, and practising it with rare skill, he had come also into all the public honors and acknowledgments that await men of his class in France. He was born in Paris, on November 29, 1825, and was the son of a poor coach-builder. He took much pride in his humble origin, saying, "It affords me the satisfaction of showing myself thankful to my father, who imposed on himself such privations to push me on." He grew rich as well as eminent, but he continued to the end a hard worker, rising very early in the morning, and never missing in over thirty years, except on Good Friday, his daily visit to his patients. During the days of the Commune, when the roads and streets were all barricaded, he made his way to the hospital by steamer on the Seine. He was not merely a specialist. He had a deep and intelligent interest in literature and art.

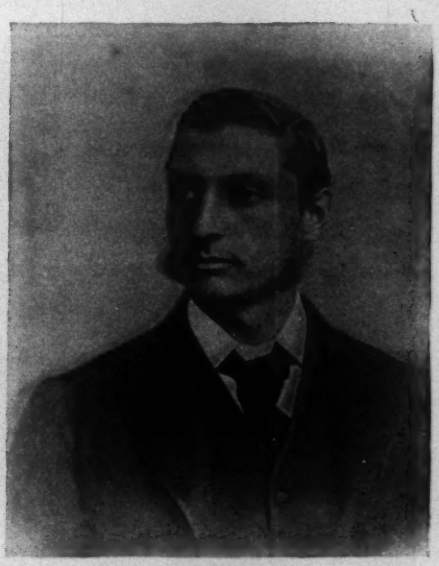
FRANCIS PARKMAN'S life and work are so fully treated of elsewhere in this magazine, that no note need be made on them here.

HENRY RIDER HAGGARD.

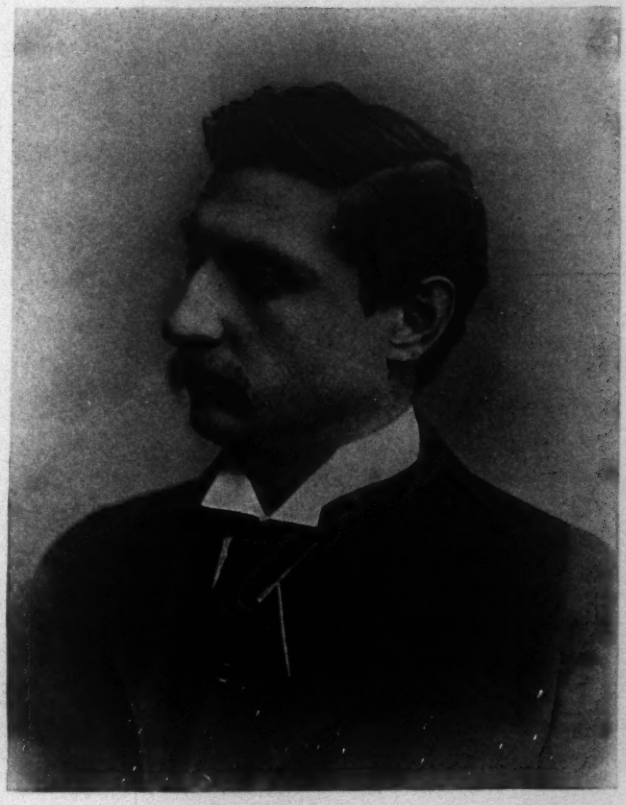
AGE 5.

AGE 7.

AGE 19.



AGE 22.



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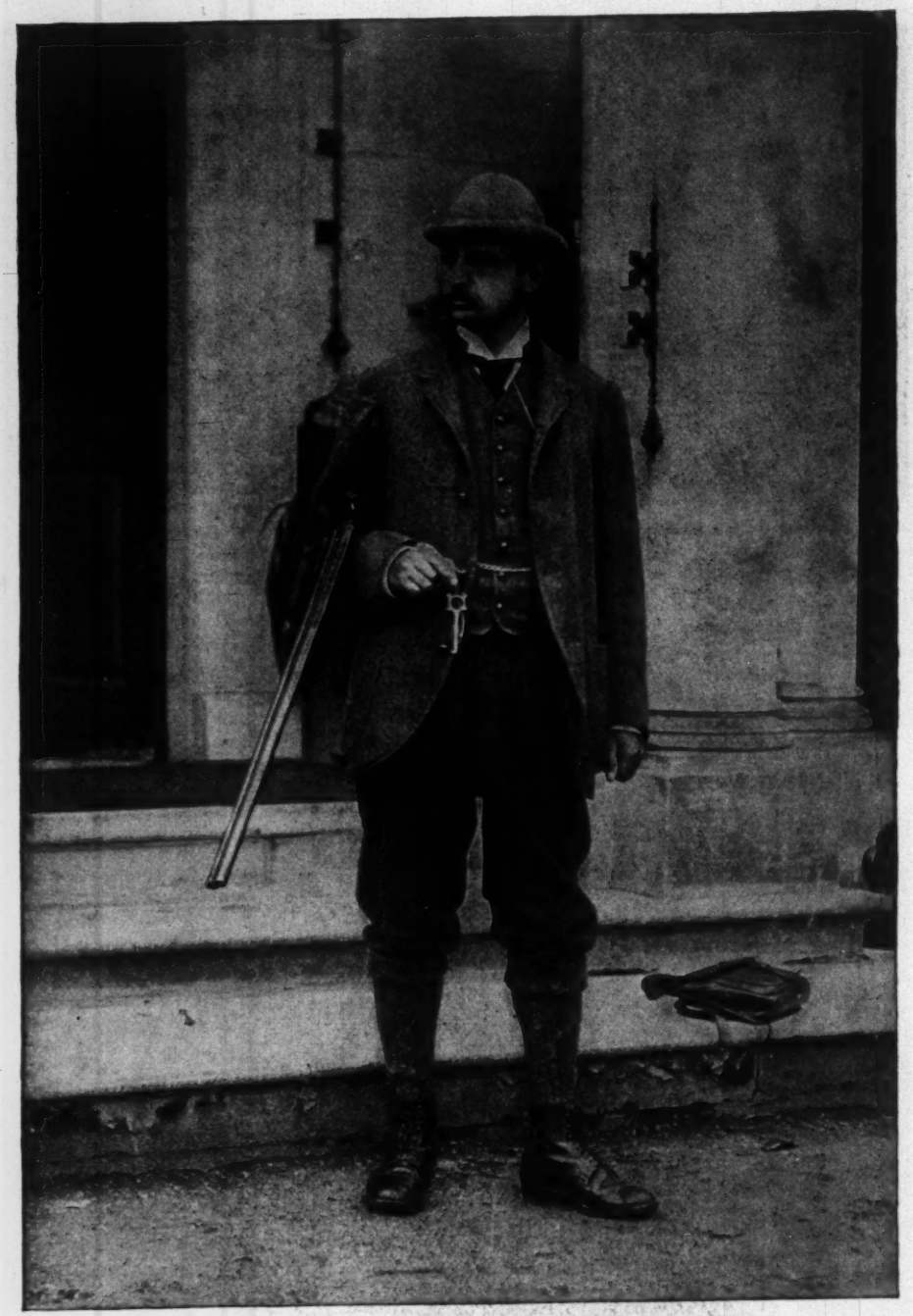
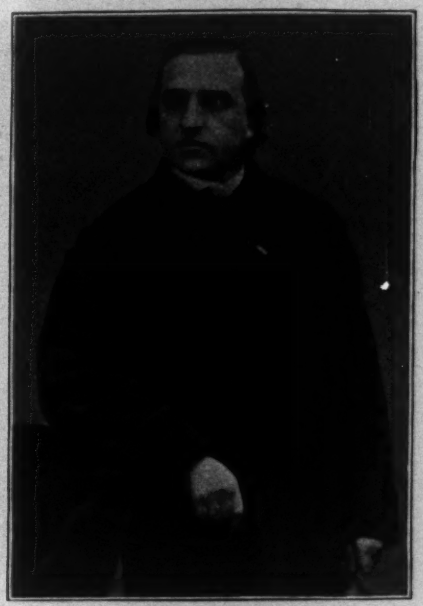


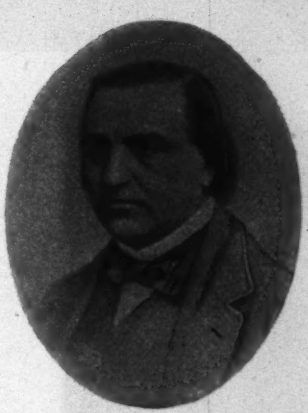
MR. HAGGARD AT THE PRESENT TIME.

JEAN MARTIN CHARCOT.

AGE 35. 1860.



AGE 38. 1863.

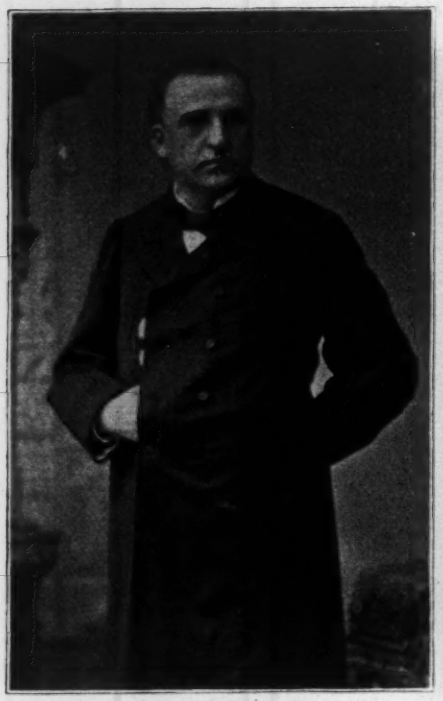


AGE 41. 1866.

AGE 47. 1872.

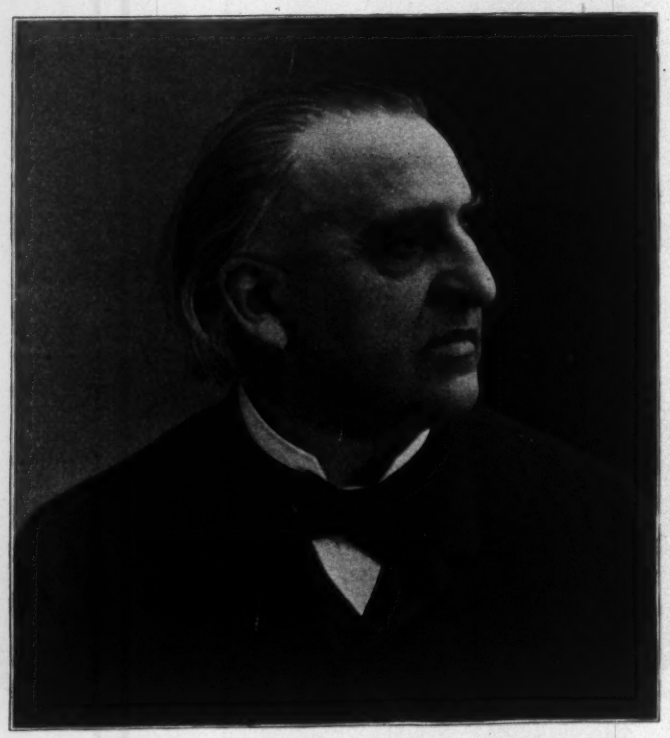
AGE 51. 1876.

AGE 55. 1880.



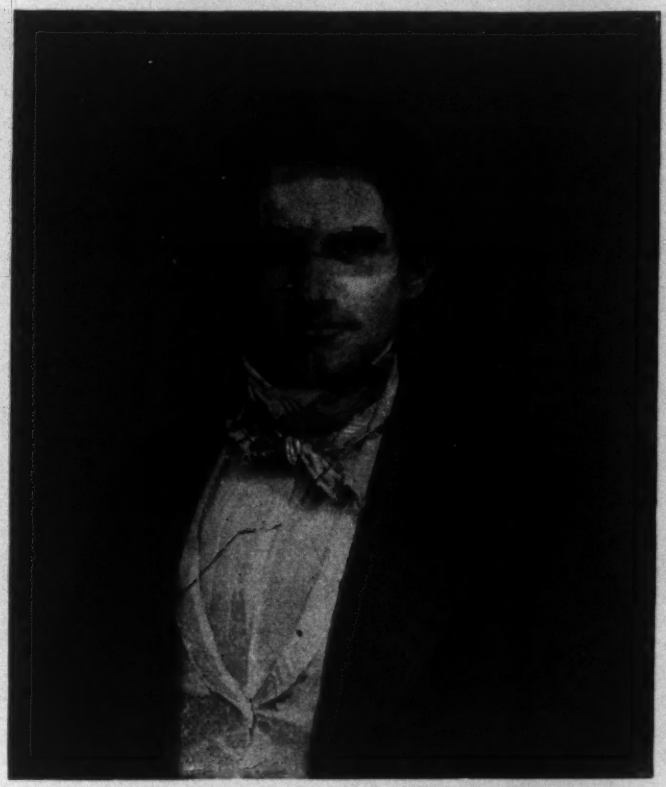
AGE 55. 1880.

AGE 64. 1889.

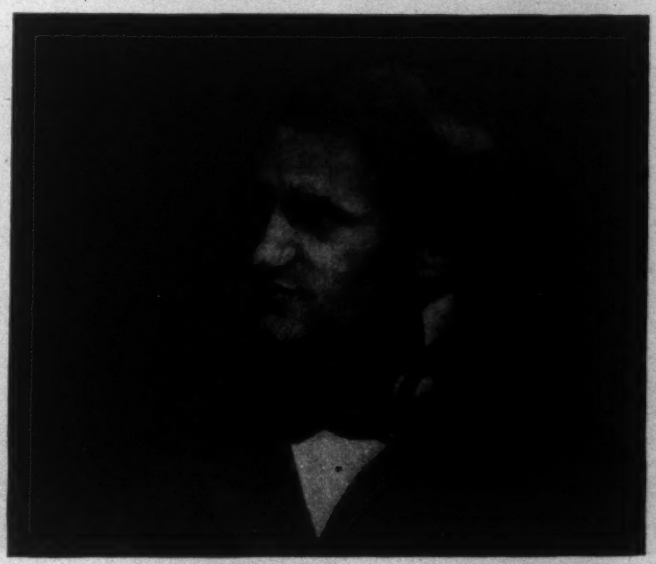


AGE 64. 1889.

FRANCIS PARKMAN.



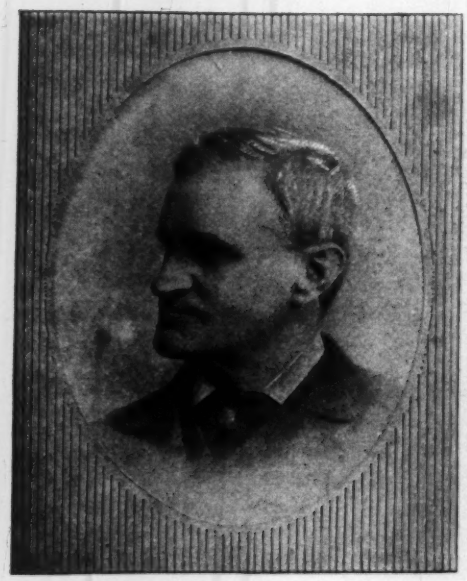
JUSTLY BEFORE HIS FIRST TRIP TO EUROPE IN 1843.



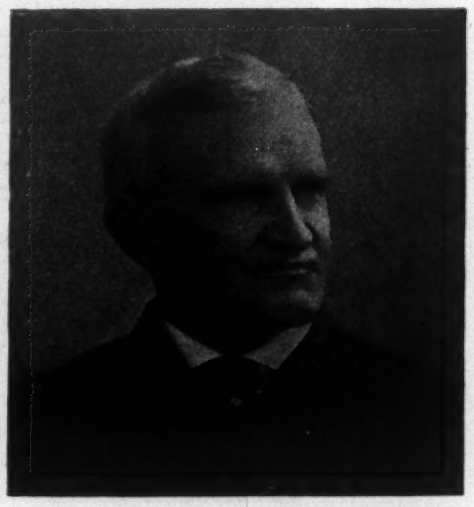
WHEN AT THE LAW SCHOOL, ABOUT 1845.

AGE 43. 1866.

BETWEEN 1866 AND 1870.



AGE 59. 1882.



1892. THE YEAR BEFORE HIS DEATH.

WHEN SHE WAS THIRTY.

By Louise Chandler Moulton.

IT was Eleanor Gray's thirtieth birthday. Suddenly she awoke to the knowledge that youth with its vague hopes and dreams was over. She had never quite understood how swiftly the years were passing. One day was so like another, and the heart in her was so young, she half thought that she herself was a young girl still, and that Love might be waiting 'round the corner. Hitherto Hope had held her by the hand. But somehow there was a cruel positiveness in the number thirty. So many years had she lived—the years of charm and expectancy. What could there be to come now? But what had there been, even in the past?

She went back in her thoughts over the life she had lived, and regarded it as if it had been that of some other person. She had been born in the wrong family, she said to herself—that was the beginning. They loved her well, the practical, unimaginative parents, whose only child she was; but they had never understood what she meant. Her ways were not as their ways, nor her thoughts as their thoughts. They had been proud of her in some uncomprehending fashion, but they had smiled at her aspirations and ambitions, as at the amusing vagaries of a petted infant. They gave her the harp on which she wanted to play, just as they had given her the talking doll she coveted and made friends with when she was a child. They let her buy herself poetry books, just as they had let her buy sweetmeats. They were good and dear—oh *so* good and dear—she said to herself, on this morning of her thirtieth birthday. But they did not know her. No one had ever known her; of that she felt certain.

She took a little hand mirror from her dressing-table, and began to study her face in it. The features had not changed very much since she was twenty. Perhaps the eyes were a little more sad, and the cheeks had not quite the wild rose bloom that belonged to them ten years ago; but really there was not so very much difference. Then she held the glass nearer, and looked in it a little more closely. There were—yes, there were—wrinkles, slight, yet unmistakable, at the corners of her eyes. They were big blue eyes, by the way, with black lashes. The young gold of her hair was turning to autumnal brown. And the lips, that had never been warmed by kisses, seemed to have grown thinner.

"Yes," she said, "ah, yes, I *am* older. I can see it in the glass. I am not so pretty as I was; but what good did the

prettiness do? Who ever loved me really; unless—" She did not finish the sentence. If she had, it would have been "unless Tom did."

And then she laid down the glass, and her thoughts went on a long journey, back to the far away days when Tom Rhodes used to come home with her from all sorts of places, and look at her with such eloquent eyes that she had not forgotten their language even yet. She had never let him go farther than looking, however. The world—her unconquered kingdom—was all before her, in those days, and she did not mean to take Tom for Prime Minister. He was a dear, good fellow—she used always to think that, when she thought about him at all. But there were poets in the world, and painters, and statesmen; and Tom—was only Tom. He taught school in the winter, and was busy on his widowed mother's small farm in the summer; and try how you would, you could not fancy him in the aspect of a conquering hero. So she had kept Tom from speaking, and finally his mother had died, and he had sold the little farm, had gone away to that vague part of the world known in those days as "Out West." What he had done there, or what had become of him, who knew? Not Eleanor, at any rate.

She wondered if it were such keen torture to other women to feel that they had grown old. It seemed to her, just then, that youth was all—all. She had quaffed its wine, and now in the cup were dregs only. And then she sadly smiled. What wine had *she* ever quaffed, after all? People used to call her beautiful—and surely she must have been at least pretty—but what good had it done her? The right suitor had never come. Of the few who seemed to care for her, she thought in this hour only of Tom. She remembered tones and looks; shy flowers, shyly given; tender little cares for her comfort in small things. But in those old days her ambition soared far beyond Tom. Would it have been better had she cared for him? Would *he* have understood her? Would love have made that possible? For she felt now that her deepest longing had always been to be understood. Love that was given to the external Eleanor would never have been enough. She must meet some one who had the key to her deepest soul; else must she live and die more solitary than any monk of old in his hidden hermitage.

Could it be that she had thrown away what might have been life's fulness of joy? Ah, well, it was of no use to wonder now. Tom was far away, and she was thirty years old. Just then she saw the old village postman coming slowly down the street. She threw up the window, and reached out an impatient hand for the letters he brought. They were all from school-girl friends, she saw, as she glanced at the handwriting on the envelopes. She was not in the mood to care much for them. "Drearily uninteresting," she said to herself, as she opened one. A slip of paper dropped from it unheeded. Eleanor read on listlessly. Suddenly her eyes kindled. She had come to this sentence: "I used to hear you speak of Tom Rhodes—an aspirant of yours, was he not? Can this marriage notice I inclose be his?"

Eleanor picked up the bit of paper from the floor, and studied it. It was cut from the Denver (Colorado) "Times," and it read:

"Thomas J. Rhodes of Connecticut, to Margaret Eliza, daughter of John Riding, Esq., President of the Wheel of Fire Mining Company."

So *that* was what had become of Tom. She had not remembered the J. in his name, but of course it must be Tom. There could hardly be another Tom Rhodes of Connecticut.

It sounded prosperous—this marriage to the daughter of the president of a mining company. So this was the end of her one true lover. She had never said before, even to herself, that she knew Tom loved her. But she acknowledged it to her own heart now. It was as if a window had been opened into the past, and a great flood of light poured from a day whose sun had long since set.

Yes, Tom *had* loved her, and Tom *would* have understood. He and she might have been one, if only she had known; if only that weak ambition she used to think so strong and fine, had not held her heart in its thrall. She had the New England conscience; and it was borne in upon her mind that she ought to wish Tom to be happy in this new love, this new life. Did she? She tried to cheat herself into thinking so, but her soul defied her. "You know well," cried the voice of conscience within her, "that you don't want him to be quite, quite happy. You wouldn't like him to be absolutely miserable, but you want him to be something short of satisfied; to say to himself every day, and every day, 'Ah! Eleanor would not have done this, or said that; Eleanor would have understood better.'"

And then conscience cried aloud, "Oh, you poor, small soul! Is that the best of which you are capable? You would not care for him when he might have been yours; he was not grand enough for you then; and now you would wish him something short of life's best good!" And she listened to the voice, and, afraid of herself, she cried out for strength; and it was as if her guardian angel leaned from the heights of heaven, and drew her quivering soul upward to a purer air. Then the impulse came to her to write a letter which should convey to Tom her wishes for his happiness—wishes wholly honest now.

She lingered over it for some time. She began it, "Dear Tom." Then she bethought herself of propriety, and began over again and wrote:

"DEAR MR. RHODES,—I have just chanced to see, in a Denver paper, the announcement of your marriage. Oddly enough, just before it came to me, I had been especially thinking about you. I am thirty years old this day, and it seems natural that my thoughts should be busy with my youth, which I somehow feel ends with to-day, and of which, until you went away, you were a part. For you a new life is just beginning. Mine is but the same old story; only it seems as if the rest of it would be what they call in books an 'Appendix.' I write this letter to wish you joy and peace and all that your heart most craves.

"I think I know you well enough to be sure that you would not have married without love—and love is the greatest thing in the world. May all its fulness and blessedness be yours, now and in the time to come,—so prays the friend of your earlier years.

"ELEANOR GRAY."

She addressed this letter to "Thomas Rhodes, care of John Riding, Esq., Denver, Colorado." She sealed and posted it, and then the thirty-year-old young woman felt that she had indeed turned the last page of her youth, and the "Appendix" of her life was already begun.

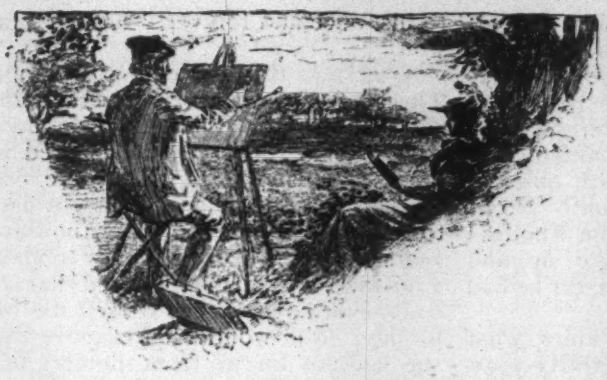
It was not long after this that a newcomer to the quiet old town of Ryefield

made Miss Gray's acquaintance. Here at last—so it seemed—came the veritable knight of romance of whom Eleanor had dreamed. Austin Bland was poet and painter both; one glory was not enough for him. He had come to the little Connecticut town to paint some of its beguiling bits of stream and meadow-land, some of its famous old trees, that seemed fairly human, they had lived so long, and were so full of wayward individuality. His pictures, he said, were for sale; his poems, on the other hand, were not the property of the world. He supposed it was unfortunate, but the truth was, he was utterly subjective. His verses, such as they were, were the very cry of his heart; and surely they did not belong in the market-place.

From the first Bland seemed to take an especial interest in Eleanor. Naturally this interest flattered her. It had been many years since any man had so persistently sought her society; and now, here in her "Appendix" of life, came the Conquering Hero, ready to turn her subject for her sake; eager to paint her charms and to sing her praises. Was it, then, for him that she had unconsciously been waiting, and was it when she was past thirty that she was really to begin to live? It seemed so, just at first.

Bland had brought one or two good letters, for even in rural Ryefield letters were necessary; and he had met Eleanor at a high tea at the rectory, the very first week after his arrival. It was the glorious midsummer—the long golden days when the sun seems so in love with earth that he sets reluctantly; when all the world is at its best, and the birds sing its praises, and the butterflies flutter lazily about as if to see in what a beautiful sphere they are allowed to pass their little day. There were soft mists at evening in the valley of the Quinebog—mists that followed the splendor of the setting sun, and fled before the rising moon.

Austin Bland never tired of saying how infinitely precious it all was. Sometimes he studied the trees, and sometimes he studied Eleanor. He sketched her as Cleopatra, whom she certainly did not resemble; as Iseult, whom she might have been; as fair Rosamond, with the fatal cup in her hand; as herself, in a score of attitudes. He wrote verses to her in French metres—rondeaux, triolets, and ballades; and these, he told her, were

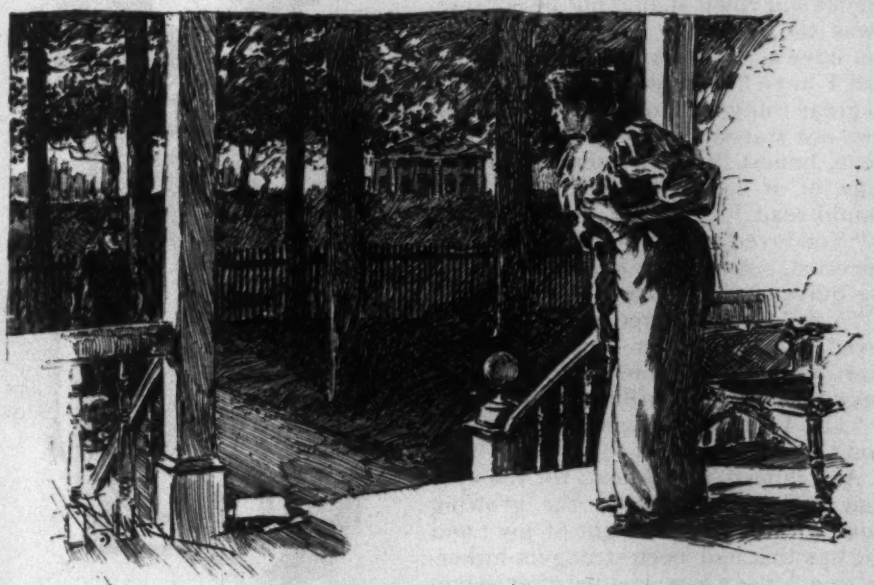


for her only—that cry of his heart which none other than herself must hear. It was all so delightfully romantic that Eleanor began to think she was quite sufficiently in love with him, though love was somehow a less strenuous and exciting emotion than she had hitherto supposed. She was rather glad sometimes to be left alone at the close of an afternoon of art and of romance. Of course, this was because she was thirty. There could be no doubt that it was the right thing—this highbred passion that wooed her with all the resources of art. Bland had not spoken of the future, but that must be because he was too delicately reserved to approach her rashly.

At last there came a July twilight. Bland and Eleanor had been watching the sunset together. He had been talking about his theories of sunset effects; he was always talking about his theories — they were for him the one significant and sufficient theme. Then, when the sun had fairly gone out of sight, Bland got up to depart also, and stood for a moment looking thoughtfully at Eleanor.

"I must see you to-morrow," he said. "Shall it be three o'clock? I have something to say to you."

"Yes, at three, if you will," she answered; and then he was gone, and she sat musing in the waning light. Of course he was coming to ask her to be his wife. His whole manner had expressed his intention. She was as certain of it as if he had already spoken. Why was she not more exultant? Why did she always feel just a little tired when they had been for some hours together? Of course it would be a glorious destiny to be what he had called her—the queen of his art; to share his ambitions; to be the confidant of his dreams. She ought surely to be grateful to Fate, and surely she was.



At thirty, no doubt, the time for ecstasy is past. She looked out into the vague distance, and saw some one walking toward her, under the trees that fringed the highway. There seemed something familiar in the coming figure. She caught her breath quickly. Were her eyes deceiving her? No, it was—it absolutely was—Tom Rhodes! As one in a dream she got up and moved forward to meet him, for he had turned in at the gate now.

She seemed hardly to know what strange thing stirred in her thirty-year-old heart when he took her in a strong, close clasp.

"You, Tom?" she cried, "you?"

"Yes, Eleanor, the same old Tom."

"And your wife? Where is she?"

"Here, darling, if only I can win her."

"What!"

"Yes. I am not Thomas J. Rhodes. He is my second cousin; from Connecticut, also, but from quite another part of the State. I am Thomas Rhodes, at your service; the same Tom who loved you years ago, and has never thought of marrying any other woman. You made me feel, in the old days, that it would be of no use to speak to you, and so I went away. But when I got your letter, and knew that you were Eleanor Gray still, I resolved that if I did not win you it should not be because I was too cowardly to ask. At least you have a right to know how long and well I have loved you. I have done no great things. I am neither hero nor poet nor statesman; but I have lived a clean, honest life, and there is not one page of it I am ashamed that you should read."

"You loved me—me—all this time?" she cried. And there was a little choking quiver in her voice.

"Yes," he answered, solemnly, "I loved you, and you only, then and now and always; but you have not answered me yet, darling."

"Oh, I forgot that; but you know, don't you?"

And indeed Tom knew: for the eyes that looked into his lit the growing dusk with their great light of joy; and the lips that had been strangers hitherto to a lover's kiss yielded themselves to his, once and forever. Eleanor was won.

After all, thirty was not old age. These two found that they were young enough still for ecstasy. The moon came up in the east, and looked at them curiously. Yes, they were certainly lovers. The moon has got used to lovers, for she is nearly six thousand years old; and she is not likely to make a mistake. Eleanor wondered that she could ever have fancied herself too old for joy. She wondered yet more that she had not known from the very first that it was Tom, and Tom only, to whom she belonged.

At last she told him about Austin Bland.

"I have been trying all summer to love him," she said frankly. "I thought it was the thing to do, but I had got a little tired of trying. He is coming to see me at three o'clock to-morrow, because he has something important to say to me."

Tom laughed, as a successful man may.

"Well, I shall be away just then. I am going to Boston to get a ring wherewith to fetter you to good faith.

Deal gently with the erring. I shall be back by the seven o'clock train to console you for his loss."

The next afternoon Austin Bland was punctual. He came as one who wears the willow. Sadness was in his voice and on his brow. A weed on his hat would not more clearly have emphasized him for sorrow's own.

"I go," he said; "I go this very night from you who are the queen of my art, and I must never see your too fair face again."

"What!" cried Eleanor, startled for once from her stronghold of composure.

"No, never! I am to be married, next month, to someone who loves me—but, ah, she is not you! I have let myself forget all in the supreme joy of your presence, but I must forget no longer. Pity me! You can afford me so much grace. Circe, I dare not drink your cup."

It was really quite a masterly exhibition of histrionic power. It was hard-hearted and ungrateful of Eleanor to smile at it, as I am afraid I am bound to confess that she did.

"I am to be married almost as soon as you are," she said amiably, "to Mr. Tom Rhodes, one of the owners of the Wheel of Fire mine. But do not let us lose sight of each other. Your sketches of Ryefield scenery are quite too lovely. I should like to give you an order for some of them, that in far-off Colorado I may not altogether feel bereaved of the old home."

"You are only too good—too good and kind," Austin Bland said mournfully; "but, ah, I must really never see you again. Goupil & Co. are my agents. Farewell, queen of my summer!"

And he made his exit, this Knight of the Sorrowful Countenance, after the most approved theories of romance. At half-past seven o'clock Eleanor told her little tale of the afternoon to Tom Rhodes; and then she said, with a laugh, "So you see I couldn't have had him, after all; you are only Hobson's choice."

"No, thank God! I am Eleanor's."

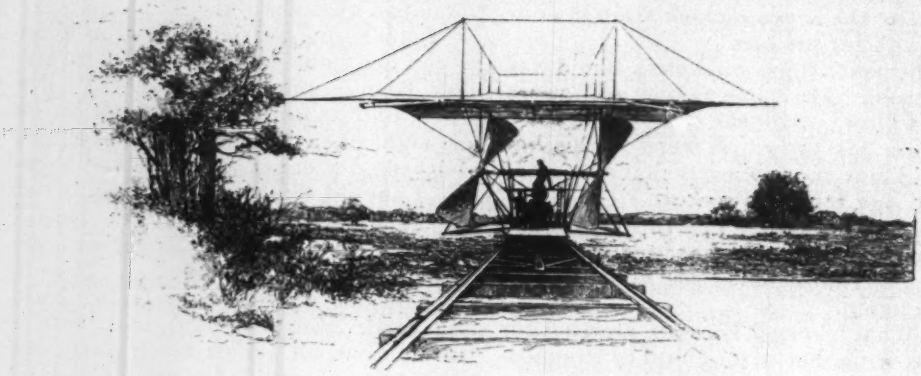
WHY REPINE?

By Walter Savage Landor.

Why, why repine, my pensive friend,
At pleasures slipt away?
Some the stern Fates will never lend,
And all refuse to stay.

I see the rainbow in the sky,
The dew upon the grass;
I see them, and I ask not why
They glimmer or they pass.

With folded arms I linger not
To call them back; 'twere vain;
In this, or in some other spot,
I know they'll shine again.



THE MAXIM AIR-SHIP.

AN INTERVIEW WITH THE INVENTOR.

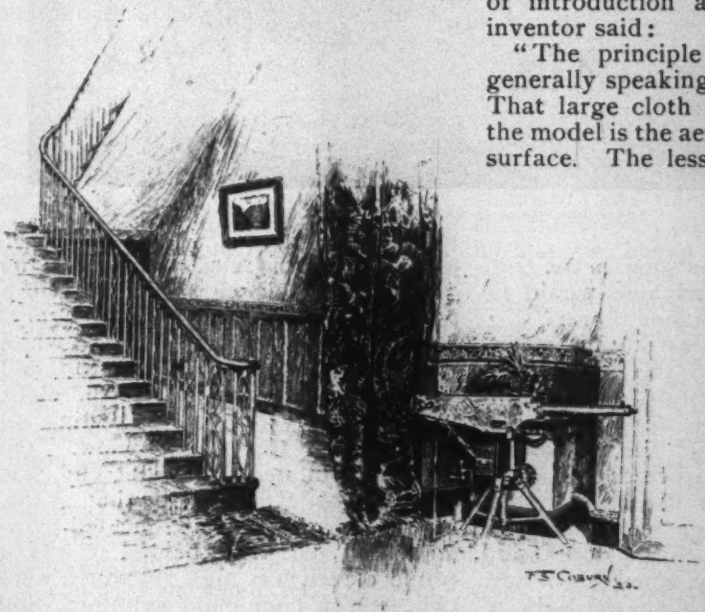
By H. J. W. Dam.

THE fact that in a few years, probably ten at the outside estimate of the experts, the navigation of the air will be successfully and safely accomplished, may be news to many, though it is well understood by all who have followed the rapid development of applied science in this direction for some years past. Ever since the project of a dirigible balloon was abandoned by the foremost experimentalists in mechanical flight, in favor of an air-ship heavier than the air, and raised by mechanical power, a steady progress toward ultimately certain success has been clearly apparent. Very few people, however, are aware of the advanced results which have already been attained, and a visit to Baldwyn's Park, near Bexley, England, would be to them a revelation which can only be described as startling. To see a great air-ship, weighing three and a half tons, flying across a park, on wheels, and to know that its engineer could lift it into the air, in a moment, by a turn of his wrist, makes one doubt the evidence of his own senses. It comes upon him with a shock, as if he had just awakened from a long Rip Van Winkle slumber, during which the magic of the world's advancement had left him hopelessly behind. The big white machine is a practical, moving fact, however. It can propel and lift itself. And just as soon as those subordinate experiments, upon which depends the safety of aerial voyages, are completed, one of the greatest mechanical problems of the ages will have been finally and practically solved.

Among all the scientific men whose researches have contributed to this most important result, Mr. Hiram S. Maxim, the inventor of the air-ship in question, stands foremost. As the inventor of the Maxim gun, and many other ingenious machines of less importance, he had won a world-wide fame before the navigation of the air became the chief object of his study and investigation. Beginning life fifty-three years ago, with a common-school education and a jack-knife, in Sangerville, Maine, he is now the proud possessor of a town house in London, and is lord of the manor at Baldwyn's Park, a stretching domain of hundreds of acres, which he leased five years ago as well adapted to his preliminary experiments. Mr. Maxim is a man of medium height and solid build, his weight being two hundred and ten pounds. His hair, mous-

Note.—The illustrations for this article are from copyrighted photographs taken under the supervision of the author and Mr. Maxim, by Pradelle & Young of Regent Street, London.

tache, and beard are white, but his mental and physical energy are astonishing, and go far to explain the variety and extent of the results he has achieved. The work of inventing and constructing a flying-machine, nearly every part of which, from boiler to connecting rods, is a variation from existing appliances, enforced by the necessities of the occasion, is one which could only be undertaken by a man of much ingenuity, equipped with an extraordinary practical knowledge of mechanics. Even with these advantages, success would be impossible without unfailing energy and industry. All these qualities are, however, clearly visible in the manner and speech of the inventor. His voice and action show great physical strength, while his eyes, which are a deep brown, full and wide open, have continuously the semi-absorbed, preoccupied look of the student concentrated upon a problem. A courteous host, a jolly, even boisterous, story-teller, and a wonderful mechanician, Mr. Maxim is in his way as unusual as his machine. Withal he has a sturdy Americanism which personal interviews with half the reigning monarchs of Europe have not in the least affected, and he retains a pleasant conviction that of all the spots on the map of the world, not one is so important or so agreeable to contemplate as the good old "down-East" State of Maine. The American flag hangs in his hall, and he regards the United States as the safest, in fact the only, place in which to invest his money; a conclusion which is not without its importance, considering that his knowledge of European countries from the military, political, and financial standpoints has been attained through the channels of the gun business, and is, therefore, both comprehensive and exact.



THE HALL IN MR. MAXIM'S HOUSE.

For excellent and obvious reasons the visitors to Baldwyn's Park have been few. In his answer to my request for the privilege, Mr. Maxim wrote that he did not think it well to "say too much at present," but expressed his willingness to give "a few safe particulars." Upon arrival at Baldwyn's Park, the proceedings began with an appetizing luncheon in a handsome dining-room, though above the table hung an ornament which was perfectly calculated to entirely take away a visitor's appetite. This was a model of the air-ship on the scale of an inch to the foot. It was so strange an object that it made one oblivious of the fruit and indifferent to the coffee. By way of introduction and explanation the inventor said:

"The principle I have worked on, generally speaking, is that of the kite. That large cloth frame at the top of the model is the aeroplane, or main kite surface. The lesser aeroplane above the platform, or car; the side aeroplanes, or wings; and the flat-pointed rudders, fore and aft, are designed to furnish additional kite surface. It is necessary to make it, however, so that we can run it in a calm, against the air, thus making our own wind, as it were; and for this purpose I have a railway track, and

instead of cords to hold the kite against the wind, I employ a pair of powerful screw propellers driven by a steam engine. In this manner I can drive the machine exactly as I please, can ascertain exactly how much the push of the screws is, and at the same time find out exactly how much the machine lifts at different speeds. The machine is, in fact, a big kite. Should I fly it in the air with a cord during a strong gale and then run my engines, I should be able to find out how fast they would have to run in order to take all the pull off the cord. As soon as the cord became slack, the machine would be flying with its own engine power."

THE DINING-ROOM IN MR. MAXIM'S HOUSE.

To more clearly illustrate his meaning, Mr. Maxim led the way to the workshop in the grounds—a large and substantial bird-cage, sixty feet wide and fifty high, in which the mechanical bird had been constructed, and stood perched for one of its daily flights. A railway track, nine feet wide, ran outward from the closed doors, and stretched indefinitely, in a straight line, across the green level of the park to the line of a belt of woods two thousand feet distant. The front of the shop consisted of four large doors, "the largest in the world," their owner remarked; and when these were rolled back by a dozen workmen the air-ship came into view. It was so novel, so unexpected, and so apparently complex at first sight, that it held the eye for a long, silent period; the beholder's sensation being one of wonder, if not awe, coupled with an indescribable mechanical confusion of ideas.

It took many minutes to grasp it; to form an intelligent idea of it. Then, as the sense of relation between the different parts developed, it became a framework of black steel rods of varying sizes, with a square frame of white cloth, fifty feet by fifty at the top, and an inclined wooden platform, eight feet wide by forty long, resting on wheels upon the track below. On the platform, near the front end, was a small boiler-house in the shape, roughly speaking, of a truncated pyramid, and ten feet behind it was a frame eleven feet high, on which were two sets of compound cylinders, and two big wooden screws above the two

MR. MAXIM'S HOUSE AT BALDWYN'S PARK.

sides of the platform, and eighteen feet apart. Outside of these fundamental accessories were a water-tank, a naphtha-tank, and an indefinite number of rods and very small wire ropes, to give strength and compactness to the whole. The many minor elements of the machinery did not at first catch the eye, but all appeared in interesting action when details were entered upon later on. It should be noted that the machine, as it stood and as it appears in the accompanying pictures, was without the side planes, and the big rudders of cloth on steel frames, which are mounted, fore and aft, on the main aeroplane. These are not used in the experimental trials, their utility having been established, as far as is possible without a practical test in the air.

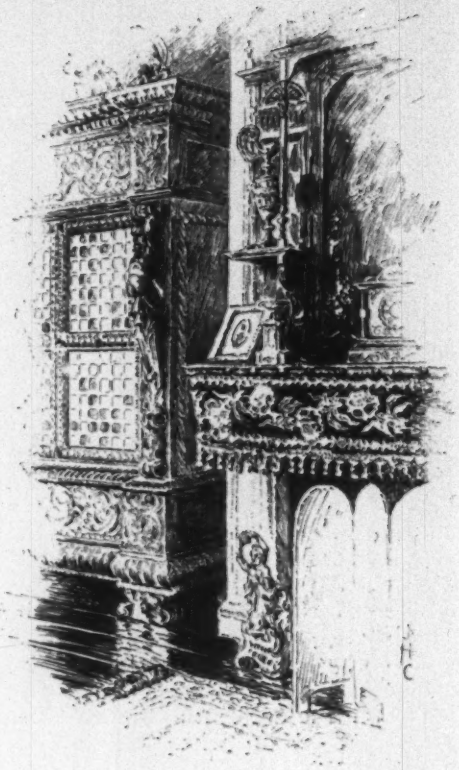
Pushed by the workmen, the machine rolled slowly out of the house, and shortly stood upon the track in the park. It had completely filled the workshop from roof to floor; but here, with only the sky above it, seemed smaller and lighter. The steam was hissing in the boiler; the big screws had made one or two preliminary revolutions, and a flight along the track was imminent. "Jump on board," shouted its owner, who stood at the boiler, conning half a dozen different gauges; and, climbing over an outlying rod like the outrigger of a canoe, I mounted the platform, which was of the lightest matched boards, so thin that they seemed insufficient to bear a man's weight. Prior to the start, a rope running to a dynamometer and post was attached behind to measure the forward impulse, or "push," of the screw. Mr. Maxim turned on the steam, and the screw on the port side began to revolve. It is seventeen feet eleven inches in length, five feet wide at the ends, and twenty-two inches at the waist. It is made of the lightest American yellow pine, and painted a pale blue, the paint having been sandpapered to perfect smoothness, reducing the skin friction to a point at which it became negligible. It revolved faster and faster as the steam power was increased, until it was whirling on its seemingly frail framework at a dizzying speed. Then steam was shut off; it came quickly to a standstill, and its fellow on the other side was tried. All working smoothly, both screws began to turn faster and faster and faster, until the eye began to lose the blades and retain only the sense of two whirling discs. The action of the screws at high speed caused remarkably little shaking of the whole machine. This is one of the surprises of the invention, the tremendous force exerted as compared with the lightness, steadiness, and compactness of the whole.

Behind the screws, forty feet away, two men were squatting over the dynamometer, and indicating the degree of "push" on a large index board for the engineer to read. The index marked

four hundred, five hundred, six hundred, seven hundred, and, finally, twelve hundred pounds of "push." The pressure was then diminished below five hundred, and the commander yelled: "Let go." A rope was pulled, the machine shot forward like a railway train, and, with the big wheels whirling, the steam hissing, and the waste pipes puffing and gurgling, flew over the eighteen hundred feet of track in much less time than it takes to tell it. It was stopped by a couple of ropes stretched across the track, working on capstans fitted with revolving fans. The stoppage was gentle, and the passenger breathed freely again, looking now upon the machine with more friendly and less fearful eye, as if it were a dangerous bulldog with which amicable relations had been established and fear of injury was over. The machine was then pushed back over the track, it not being built, any more than a bird, to fly backward. In a quarter of an hour it is again at its starting place, and ready for another flight. Having seen it in action and had evidence of its power, the details were more than ever interesting, and were furnished by the inventor in succinct and practical terms.

The first question was its supporting power in the air. He said:

"The area of the main aeroplane is two thousand eight hundred and ninety-four square feet; of the small one, one hundred and twenty-six; and of the bottom of the car, one hundred and forty. With the rudders and wings added, the total area is about six thousand square feet. The wings are ten in number, and superposed, five on each side, and are each five feet wide and from twenty-five to thirty-five feet in length, according to their positions. The forward rudder, projecting in front from the main aeroplane, is eighteen feet wide and thirty feet long, and the aft one, eighteen by twenty-three. Rudders and wings, like all the other aeroplanes, are made of a specially woven cotton cloth, so fine that you cannot



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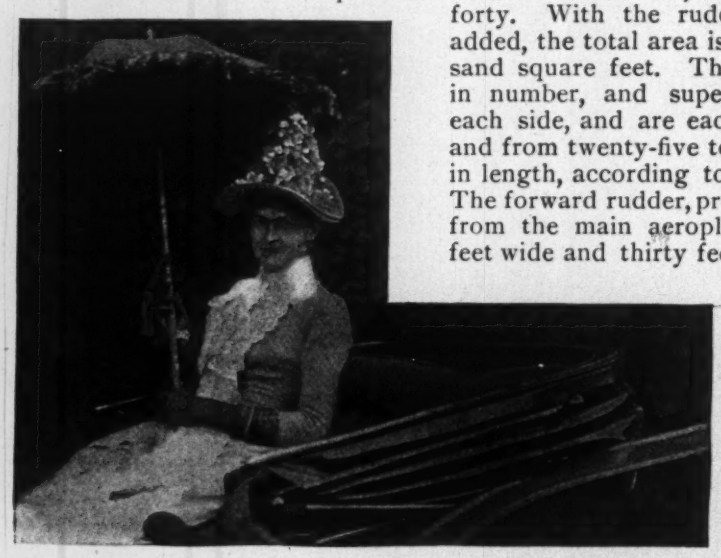


MRS. MAXIM.

blow through it, and mounted on a framework of hollow steel tubes. All these aeroplanes are inclined at a small angle to the air, the angle which gives the most support combined with the least resistance to its forward motion."

"What speed is necessary to support the machine in air?"

"A minimum, under present conditions, of twenty-five miles an hour. At that speed, with wings and rudders adjusted, it will leave the track. It lifted in one of the earlier trials, and caused us some trouble, as we were not ready."

"What will happen in the air if anything goes wrong, and the engine stops?"

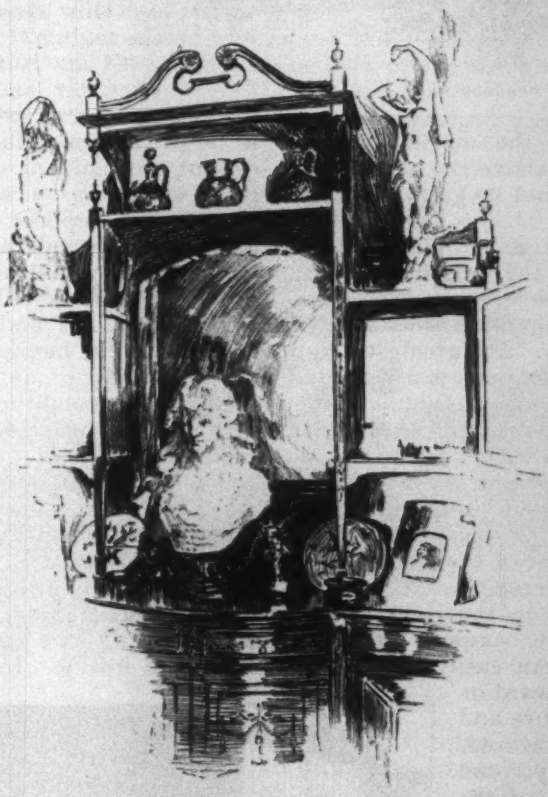
"The machine will settle to the earth, and land with the same velocity as if it had fallen a distance of three feet."

"Only three feet?"

"Yes. When the propulsion ceases, the machine will fall three feet. At this point the resistance to the atmosphere afforded by the aeroplanes will become nearly equal to the force of gravity, and it will settle without any increase of velocity."

"How about its steadiness in the air? You know a kite sometimes indulges in extraordinary rolling, to say nothing of darts and dives."

The explanation of this point was given ocularly, and much more clearly than words would have made it. Mr. Maxim tore a sheet of paper from his note-book, held it up, and let it fall to the ground. It darted, dived, and fell in irregular lines, shooting out behind him. He then took the same sheet of paper, tore a square out of each corner, and bent back the four sides from the corners of the squares at an angle of forty-five degrees. He then held this up and let it fall. It sank to the earth gently, without a tremor, its surface remaining perfectly even throughout. "That," said he, "is the principle of the wings. They are so adjusted that as any side is depressed it presents a greater lifting surface to the air below. There's no trouble keeping her on an even keel," he added, with a smile.



A BIT IN THE DRAWING-ROOM.

"But can't it tip over in a wind?"

"No. It is quite possible to make a plane remain right side up in the air, even if the centre of gravity is considerably above the centre of lifting effort. Stability in the air depends very largely upon the shape of the aeroplane, but nevertheless with this machine the centre of gravity is very much below the centre of lift; and this, together with the form of the aeroplane, makes it quite impossible that the machine should tip over in the air. The centre of gravity in this machine is here," and he held up his hand at an imaginary point about five feet back of the boiler, and seven feet above the centre of the platform. It may be here mentioned that the main aeroplane is twenty-five feet above the platform. The

THE WORKSHOP.

total height of the machine to the tops of the rods above the aeroplane is thirty-five feet, and its greatest length seventy feet.

"Are the cotton aeroplanes strong enough to bear the weight in falling, without fracture?"

"They are twenty-five times stronger than is necessary. The greatest weight which can bear on them is a little over a pound to the square foot, and they are tested for twenty-five pounds. The pressure on the cloth is practically the same at all speeds, whether the machine is falling to the earth or sailing through the air; the cloth in any case has to sustain the weight of the machine."

"How is it steered?"

"For steering to the right or left I expect to use the screws. If I have any difficulty I can easily use rudders. For steering upward or downward the fore and aft rudders will be used. The aft one is pivoted on the extension of the two centre poles, and the forward one hung on their ends. Both will be worked from the centre of the platform, and will at first require a man to each, though I shall greatly simplify the working of them later on."

"What is your estimate of the speed?"

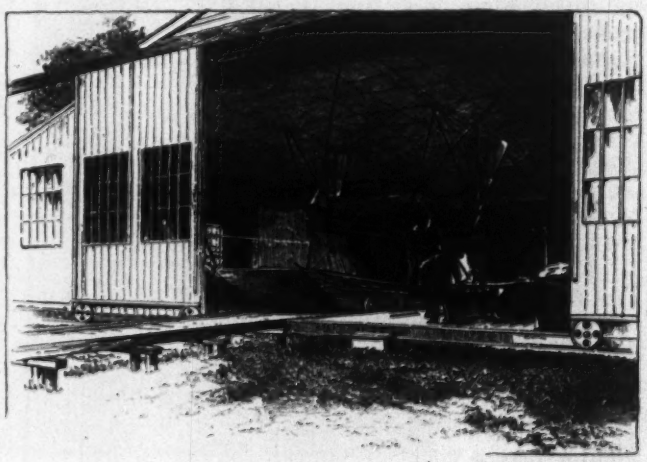
"I don't expect, with this machine, to get over thirty-five miles per hour. The next one, which will be smaller, and will be worked with a hundred horse-power, will give me, I expect, from fifty to sixty miles per hour. The highest speed I look for, as the art is perfected, is ninety miles per hour. I believe that any speed which is attained by a railway train can be reached by a machine moving through the air."

"How about the duration of the flight?"

"That is merely a matter of water and naphtha. The margin of weight-carrying is so large that, once the machine is successful, any amount of time and distance within reason can be looked for."

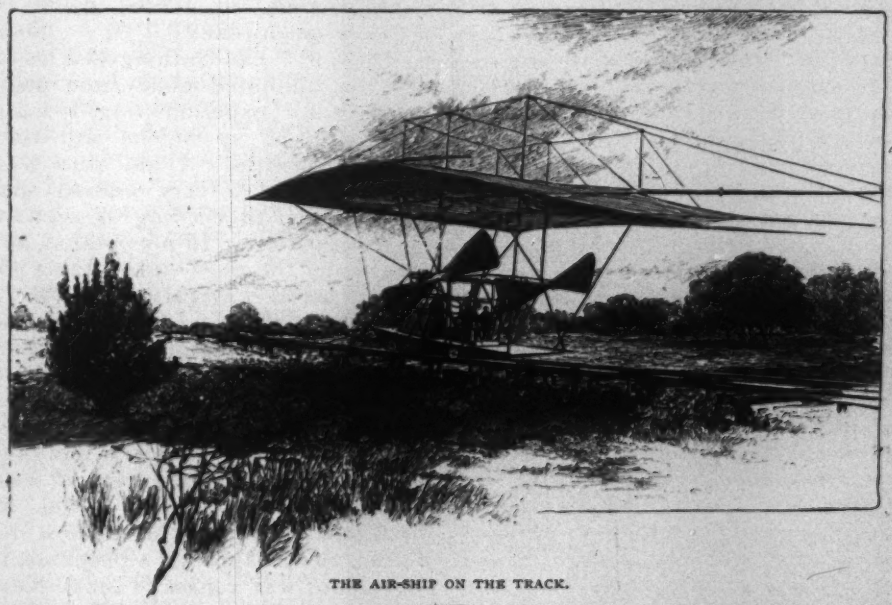
As far as support and action in the air were concerned, there seemed nothing more to be said, and yet it was difficult to realize that the facts as stated were simply and undeniably true; to realize that the navigation of the air is the traversing of an entirely new medium, whose conditions are so foreign to those of water, for instance, that they are difficult to quickly conceive.

The next question was that of weight, and here came some object lessons in the weight of metal that were astonishing. "Lift that tube," said Mr. Maxim. The tube was of copper, four feet long, and elliptical in shape, its greatest diameter being one and a half inches. It looked heavy. Lifted up, its light-



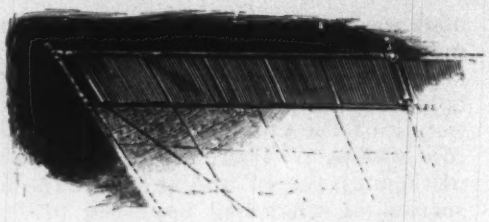
THE AIR-SHIP IN THE WORKSHOP.

ness was surprising. It weighed no more than thin paper, and actually seemed, for the moment, like paper colored in imitation of copper. "That is one of the condensing tubes," said Mr. Maxim. "There are five hundred of them up there," and he pointed to a section of what had appeared to be thin laths running across the entire front of the main aeroplane. "Of course," said he, "we can't waste any water up in the air, because we have no means of replenishing. The used steam runs up by those large pipes, and the water runs back through those small ones to the tank in the centre of the platform. The framework is constructed," he continued, "not of rods, but tubes, and tubes of the least possible weight. They are all of steel, a steel with considerable carbon in it and not tempered, and they vary from one inch to three inches in diameter. I tried aluminium, but found that steel was stronger, weight for weight. In addition to this, steel tubes can be united with great facility, and the coefficient of the joint is fully ninety-five. There is no convenient way of uniting aluminium tubes, however, and if they were united the coefficient of the joint would be very low. The heaviest tubes in the machine are the shafts of the screws, which are five inches in diameter, five feet long, and an eighth of an inch thick. The next size, used in the car, are three inches in diameter, and one twelfth of an inch thick. I have a few more, one fourteenth of an inch thick, of the same size. I need not say that at every point I have used the lightest tube possible for the strain which comes upon it, perfect safety being at all times considered, as I purpose to take my first machine up into the air myself, and I don't intend to run any risks. The bulk of the machine is constructed of hard steel tubes one twenty-fifth of an inch in thickness. The total weight of the machine, with its full complement of water, naphtha, and three men, is something over seven thousand one hundred pounds. Without the wings it is six thousand eight hundred and eighty. The boiler complete weighs one thousand pounds. This small weight, considering it gives me a force of three hundred horse-power, is perhaps the most valuable portion of the work, since it has always been known that we could fly if we could get a motive power of adequate strength with sufficient lightness. I use a compound engine, the high pressure cylin-



THE AIR-SHIP ON THE TRACK.

ders being five inches in diameter, with a twelve-inch stroke; and the low pressure, eight inches in diameter, with a twelve-inch stroke. The piston speed is eight hundred feet per minute. Nearly everything connected with the machinery had to be newly designed, with a special view to lightness, none of the known appliances being of use in this case. It was necessary, in the first place, to develop a system of making a very large quantity of carburetted air from naphtha, with very little weight." Pointing out a large hole where the air was drawn in, he said, that, as the velocity with which the combined air and gases entered was at the rate of two miles a minute, he found it very difficult to deal with these gases at this high velocity, and had spent a great deal of time in devising a system by which the gas was equally spread out over the whole furnace, and not influenced by the inductive action of the incoming gas at this very high velocity. "I had," he resumed, "to devise a system for regulating the product of the gas; for pumping the liquid into the gas generator; a new kind of boiler and feed-water heaters; a system for burning a very large quantity of carburetted air in a small space, without smoking or blowing out; a system for regulating the steam, and pumps for filling the boiler and regulating the supply. None of the existing types of engines seemed well fitted to the purpose. I had to design one expressly with a view to great lightness; and, notwithstanding there were some hundreds of types of connecting rods already in existence, I found it necessary to design an absolutely new form of connecting rods. I had to invent a new dynamometer to meet the necessities, and new dynagraphs for measuring the lift of the machine at different speeds, as well as another to measure its rate of speed through the air." He paused, looking over at the machine which represented so many hours of concentrated brain work in a puzzled, absorbed way. "And there's more to do yet," he added impressively. "I don't call this an air-ship or a flying-machine or anything else. To me it is merely a machine for making experiments in



CONDENSING TUBES ON EDGE OF AEROPLANE.

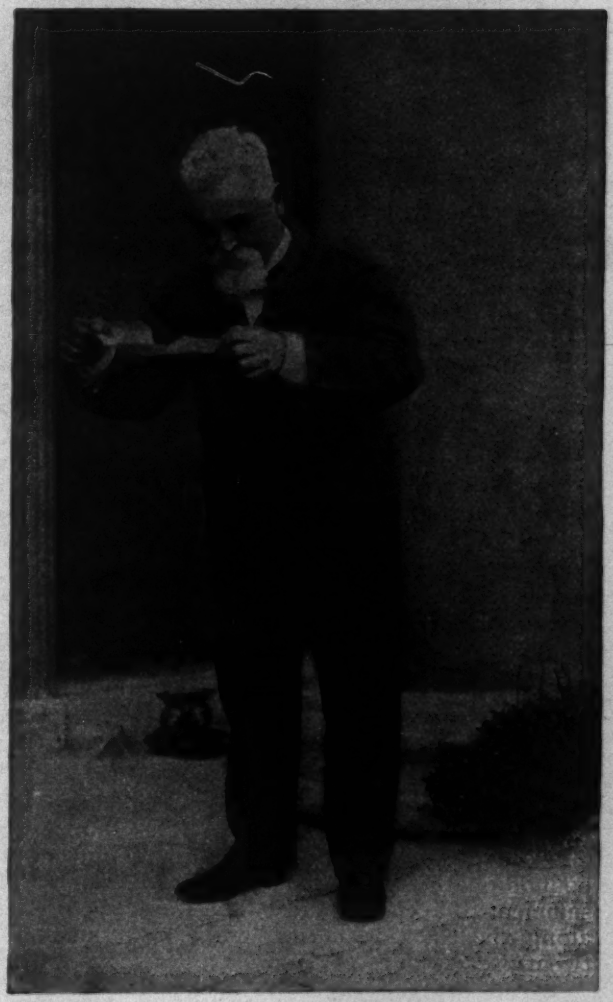
aerial navigation. In my next one, I shall make a number of changes which it is not worth while to make in this. It is slow work, but there is no doubt of the result. Propulsion and lifting are solved problems, and it is merely a matter of time."

"How much time?"

"Well, if I had nothing else to occupy me, unlimited money, and plenty of space for experimenting, I should expect to be up in the air within eighteen months. I am very busy, however, have a very limited space here, and am proceeding as economically as possible. In my opinion, however, under the most unfavorable conditions, aerial navigation will be an accomplished fact inside of ten years."

This was a digression. We now came back to the most remarkable boiler that ever was seen. It was enclosed in a house eight feet long, five feet wide at the base, and about six feet high. The sides of the house were of thick cloth, woven from pure asbestos, and the frame and top of the thinnest iron. Within, viewed through a peephole, the entire floor was a mass of small flames from seven thousand six hundred gas burners. The boiler has about six hundred tubes which are eight feet long, and about one hundred which are four feet ten inches long. These tubes are about half an inch external diameter, and half a millimeter, or one-fiftieth of an inch, in thickness. They are curved and joined into a steam drum, ten inches in diameter and eight feet long, where the water and steam are separated, the water again passing through the boiler, and the steam passing to the engine. There are also some three or four hundred much smaller tubes, which are used for heating the water by the products of combustion before it enters the main boiler at all.

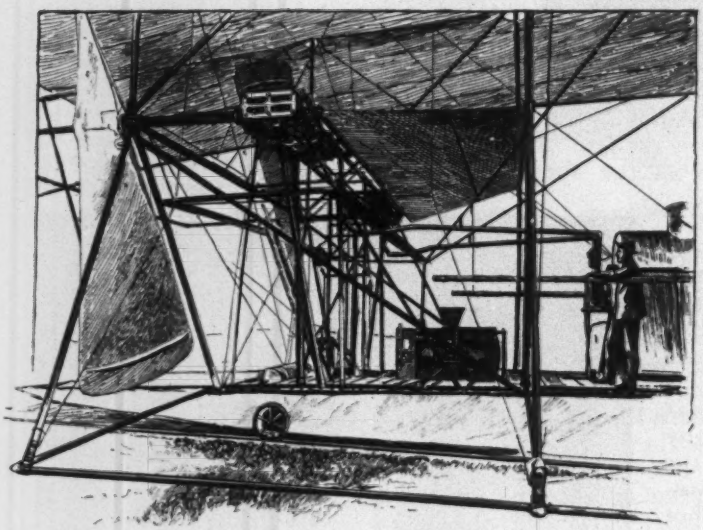
In order to prevent the tubes from being injured by the great heat of the fire, a forced circulation of the water is employed. It is therefore possible to use a very small and thin tube and a very hot fire without any danger. A single spare boiler tube in the shop served to exhibit the peculiar lightness of the boiler, which is perhaps the most ingenious, as well as the most important, part of the machine. The tube, like the condensing tube before mentioned, was as light as so much paper. It was made of pure copper, any impurities, in view of the thinness of the tubes, causing them to become "hot short" and break. "With only a moderate fire," said Mr. Maxim, "I have been able to get a horse-power out of four of these tubes; with a hotter fire I have gotten a horse-power out of three of them. Their bursting pressure under steam is sixteen hundred and fifty pounds to the square inch. The boiler itself has been fired to give a steam pressure of four hundred and ten pounds to the square inch, but I have never run the engine above three hundred pounds, thereby developing three hundred brake horse-power, which is all that I need for this weight, and which leaves a very wide margin of safety. To run the boiler the machine carries six hundred pounds of water, and two hundred pounds of seventy degree Beaumé naphtha. The consumption of naphtha is about one pound per horse-power per hour."



MR. MAXIM ILLUSTRATING THE PRINCIPLE OF THE WINGS OF THE AIR-SHIP.

Last of all, in the way of general description, came the questions of propulsion and lifting power. To give all the details, under this heading, into which the inventor entered, would alone make an article quite as long as this, if not a small volume. Concerning specific results, however, he said:

"The lifting of an aeroplane by a screw or screws has been the subject of many series of experiments by myself and others. The number of pounds lifted by one pound of 'push' in the screw varies greatly with conditions. In my early experiments with a merry-go-round, or whirling table, I succeeded in lifting fourteen times the 'push' of the screw, or fourteen pounds of weight for every pound of 'push' forward. In this large machine, however, with a large number of wires and a good deal of framework, where the aeroplane is so



DETAILS OF MAXIM AIR-SHIP.

large, where it is difficult to make it remain uniform or rigid when there is a pressure on it, and where I have an engine, boiler, platform, men, tanks, wires, and tubes to force through the air, I have not been able to lift more than six pounds for each pound of 'push.' This, however, is much more than is absolutely necessary. The engine is able to give, and has often given, a 'push' of nineteen hundred and sixty pounds, which would mean a lifting power of nearly twelve thousand pounds. With a push of one thousand pounds from the screws, using one hundred and twenty horse-power, the lift, as shown by the dynagraphs, was over six thousand pounds. This left only a weight of one thousand pounds on the track, and this was not sufficient to keep us there. The speed along the track, with this 'push,' was twenty-seven miles per hour."

"When do you expect to take your first flight?"

"I have not set any time, and shall not. Haste in an enterprise of this kind is the worst possible policy. At every trial of a machine which is mechanically new in so many particulars, weak points develop and require attention, while new improvements constantly suggest themselves. To-day it is a leaking valve, to-morrow something else. Rising into the air with a new machine, when all the experiments in the way of manœuvering, which can only take place in the air, are yet untried, would be unwise until everything which can be completely tested on the track has been so tested. The possibilities of accident must be as nearly as possible exhausted beforehand. More than this, I have not at Baldwyn's Park the necessary room and privileges. It may be that I shall not attempt to rise until I have more room, and I am now looking for a suitable location—something difficult to find in England. In fact," he added, with one of his ready New England comparisons, "I'm like a boy with a pair of skates which he has never tried, and only a little piece of ice to try them on."

The foregoing was the substance of the "few safe particulars" which Mr. Maxim was willing to give. The improvements upon his first machine, which will appear in the second, and the eventualities and possibilities of aerial navigation, were subjects upon which he was not inclined to talk very much. He confessed, however, that an air voyage of three or four thousand miles seemed to him eventually probable. "I don't want to speak of things before I am ready to do them. I don't imagine that flying-machines will be used very soon to carry bricks from Haverstraw to New York, or coals from Newcastle. The first machines are certain to be used for military purposes, whatever their cost or whatever the expense of running them, and the nation which first employs them will have every other at its mercy. I shall be quite content with my results when I can go a distance of twenty miles and back. That will suffice for all present purposes."

THE SABBATH-BREAKER.

By I. Zangwill.

Author of "Children of the Ghetto," etc.

THE moment came near for the Polish centenarian grandmother to die. From the doctor's statement it appeared she had only a bad quarter of an hour to live. Her attack had been sudden, and the grandchildren she loved to scold could not be present.

She had already battled through the great wave of pain, and was drifting beyond the boundaries of her earthly refuge. The nurses, forgetting the trouble her querulousness and overweening dietary scruples had cost them, hung over the bed on which the shrivelled entity lay. They did not know that she was living again through the one great episode of her life.

Nearly forty years back, when (though already hard upon seventy, and a widow) a Polish village was all her horizon, she received a letter. It arrived on the eve of Sabbath, on a day of rainy summer. It was from her little boy—her only boy—who kept a country inn thirty-seven miles away, and had a family. She opened the letter with feverish anxiety. Her son—her kaddish—was the apple of her eye. The grandmother eagerly perused the Hebrew script, from right to left. Then weakness overcame her, and she nearly fell.

Embedded casually enough in the four pages was a passage that stood out for her in letters of blood. "I am not feeling very well lately; the weather is so oppressive, and the nights are misty. But it is nothing serious; my digestion is a little out of order, that's all." There were rubles for her in the letter, but she let them fall to the floor unheeded. Panic, fear, travelling quicker than the tardy post of those days, had brought rumor of a sudden

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outbreak of cholera in her son's district. Already alarm for her boy had surged about her heart all day; the letter confirmed her worst apprehensions. Even if the first touch of the cholera-fiend was not actually on him when he wrote, still he was, by his own confession, in that condition in which the disease takes easiest grip. By this time he was on a bed of sickness—nay, perhaps on his death-bed, if not dead. Even in those days the little grandmother had lived beyond the common span; she had seen many people die, and knew that the Angel of Death does not go about his work leisurely. In an epidemic his hands are too full to enable him to devote much attention to each case. Maternal instinct tugged at her heart-strings, drawing her towards her boy. The end of the letter seemed impregnated with special omen: "Come and see me soon, dear little mother; I shall be unable to get to you for some time." Yes, she must go at once; who knew but that it would be the last time she would look upon his face?

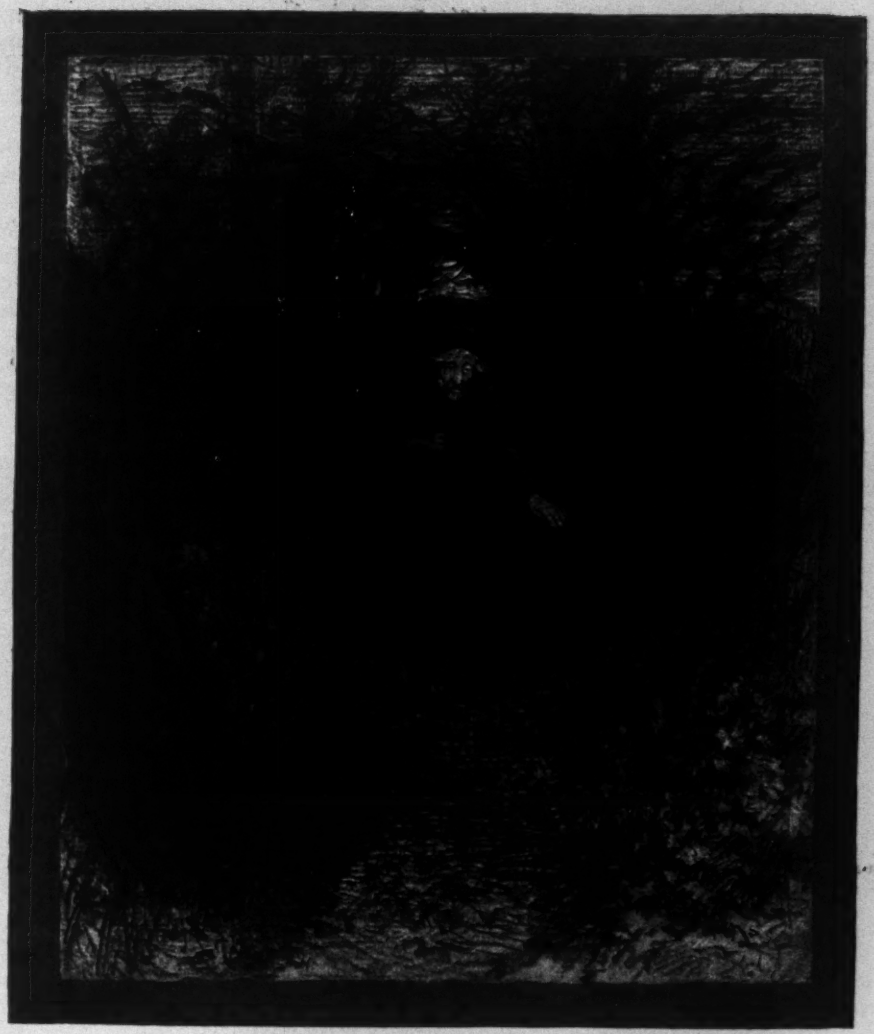
But then came a terrible thought to give her pause. The Sabbath was just "in" a moment ago. Driving, riding, or any manner of journeying was prohibited during the next twenty-four hours. Frantically she reviewed the situation. Religion permitted the violation of the Sabbath on one condition—if life was to be saved. By no stretch of logic could she delude herself into the belief that her son's recovery hinged upon her presence; nay, analyzing the case with the cruel remorselessness of a scrupulous conscience, she saw his very illness was only a plausible hypothesis. No; to go to him now were, beyond question, to profane the Sabbath.

And yet, beneath all the reasoning, her conviction that he was sick unto death, her resolve to set out at once, never wavered. After an agonizing struggle she compromised. She could not go by cart; that would be to make others work, into the bargain, and would, moreover, involve a financial transaction. She must walk! Sinful as it was to transgress the limit of two thousand yards beyond her village, the distance fixed by rabbinical law, there was no help for it. And of all the forms of travelling, walking was surely the least sinful. The Holy One, blessed be he, would know she did not mean to work; perhaps in his mercy he would make allowance for an old woman who had never profaned his rest-day before.

And so, that very evening, having made a hasty meal, and lodged the precious letter in her bosom, the little grandmother girded up her loins to walk the seven and thirty miles. No staff took she with her, for to carry such came under the Talmudical definition of "work." Neither could she carry an umbrella, though it was a season of rain. Mile after mile she strode briskly towards the pallid face which lay so far beyond the horizon, and yet ever shone before her eyes like a guiding star. "I am coming, my lamb," she muttered. "The little mother is on the way."

It was a muggy night. The sky, flushed with a weird hectic glamour, seemed to hang over the earth like a pall. The trees that lined the roadway were shrouded in a draggling vapor. At midnight the mist blotted out the stars. But the little grandmother knew the road ran straight. All night she walked through the forest, fearless as Una, meeting neither man nor beast, though the wolf and the bear haunted its recesses, and snakes lurked in the bushes. But only the innocent squirrels darted across her path. The morning found her spent and almost lame. But she walked on. Almost half the journey was yet to do.

She had nothing with her to eat; food, too, was an illegal burden, nor could she buy any on the holy day. She said her Sabbath-morning prayer walking, hoping God would forgive the disrespect. The recital gave her partial oblivion of her pains. As she passed through a village the dreadful rumor of cholera was confirmed. It gave wings to her feet for ten minutes; then bodily weakness was stronger than everything else, and she had to lean against the bushes on the outskirts of the village. It was nearly noon. A passing beggar gave her a piece of bread. Fortunately it was unbuttered,



"I AM COMING, MY LAMB."

so she could eat it with only minor qualms, lest it had touched any unclean thing. She resumed her journey, but the rest had only made her feet move painfully and reluctantly. She would have liked to bathe them in a brook, but that, too, was forbidden. She took the letter from her bosom and reperused it, and whipped up her flagging strength with a cry of "Courage, my lamb, the little mother is on the way." Then the leaden clouds melted into sharp lines of rain, which beat into her face, refreshing her for the first few minutes, but soon wetting her to the skin, making her sopped garments a heavier burden, and reducing the pathway to mud that clogged still further her feeble footsteps. In the teeth of the wind and the driving shower she limped on. A fresh anxiety consumed her now—would she have strength to hold out? Every moment her pace lessened; she was moving like a snail. And the slower she went, the more vivid grew her prescience of what awaited her at the journey's end. Would she even hear his dying word? Perhaps—terrible thought—she would only be in time to look upon his dead face! Perhaps that was how God would punish her for her desecration of the holy day. "Take

heart, my lamb," she wailed, "do not die yet. The little mother comes."

The rain stopped. The sun came out, hot and fierce, and dried her hands and face, then made them stream again with perspiration. Every inch won was torture now, but the brave feet toiled on. Bruised and swollen and crippled, they toiled on. There was a dying voice—very far off yet, alas—that called to her; and, as she dragged herself along, she waned, and reeking mists rose from the forest pools. And still the long miles stretched away, and still she plodded on, torpid from over-exertion, scarcely conscious, taking each step only because she had taken the preceding. From time to time her lips mumbled: "Take heart, my lamb, I am coming." The Sabbath was "out" ere, broken and bleeding, and all but swooning, the little grandmother crawled up to her

A MAN IN A CAFTAN OPENED THE DOOR.

cried: "I am coming, my lamb. Take heart! The little mother is on the way. Courage! I shall look upon thy face. I shall find thee alive."

Once a wagoner observed her plight and offered her a lift, but she shook her head steadfastly. The endless afternoon wore on: she crawled along the forest way, stumbling every now and then from sheer faintness, and tearing her hands and face in the brambles of the roadside. At last the cruel sun

son's inn, on the border of the forest. Her heart was cold with fatal foreboding. There was none of the usual Saturday night litter of Polish peasantry about the door. The sound of many voices, weirdly intonating a Hebrew hymn, floated out into the night. A man in a caftan opened the door, and mysteriously raised his forefinger to bid her enter without noise. The little grandmother saw into the room behind. Her daughter-in-law and her grand-

children were seated on the floor—the seat of mourners.

"Blessed be the true judge," she said, and rent the skirt of her dress. "When did he die?"

"Yesterday. We had to bury him hastily ere the Sabbath came in."

The little grandmother lifted up her quavering voice and joined the hymn: "I will sing a new song unto thee, O God! Upon a harp of ten strings will I sing praises unto thee."

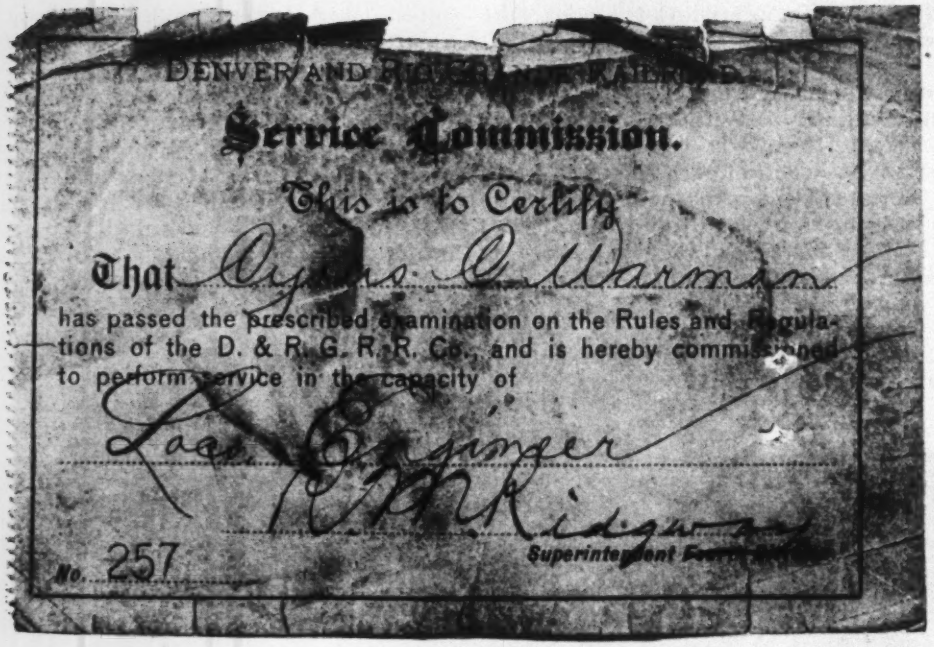
. . . . . .

The nurses could not understand what sudden inflow of strength and impulse raised the mummified figure into a sitting posture. The little grandmother thrust a shrivelled claw into her peaked, shrunken bosom, and drew out a paper, crumpled and yellow as herself, covered with strange, crabbed hieroglyphics, whose hue had long since faded. She held it close to her bleared eyes; a beautiful light came into them and illumined the million-puckered face. The lips moved faintly: "I am coming, my lamb," she mumbled. "Courage! The little mother is on the way. I shall look on thy face. I shall find thee alive."

THE NOBLE NATURE.

By Ben Jonson.

It is not growing like a tree
In bulk, doth make Man better be;
Or standing long an oak, three hundred year,
To fall a log at last, dry, bald, and sere:
A lily of the day
Is fairer far in May,
Although it fall and die that night—
It was the plant and flower of Light.
In small proportions we just beauties see;
And in short measures life may perfect be.


Service Commission.
This is to Certify
That
has passed the prescribed examination on the Rules and Regulations of the D. & R. G. R. R. Co., and is hereby commissioned to perform service in the capacity of
Engineer
No. 257

A THOUSAND-MILE RIDE ON THE ENGINE OF THE SWIFTEST TRAIN IN THE WORLD.

FROM NEW YORK TO CHICAGO IN THE CAB OF THE EXPOSITION FLYER.

By Cy Warman, formerly Engineer on the Denver and Rio Grande Railroad.

A THOUSAND miles in a night—in one sleep, as the Indians say—was what I wanted to do; and I wanted to do it on a locomotive. I searched some days in vain for an opportunity. Then I was introduced to Mr. H. Walter Webb, third Vice-President of the New York Central Railroad, told him my trouble, and promptly received permission to ride the engine that pulled the "Exposition Flyer." The artist who was to accompany me as promptly received permission to occupy the attending train.

When, on the afternoon of September the 26th, I went down to take my run out, one hundred and one passengers were waiting in the Grand Central Station with tickets for Chicago by the "Exposition Flyer." It was 2.45, fifteen minutes before leaving time. At 2.55 they were all aboard. A little ahead of my turn, I showed the gatekeeper an order signed by the Superintendent of Motive Power, which gave the engineer authority to carry me on the locomotive, and was passed to the train. I found a little, wiry engineer standing right in under the boiler of the 898, oiling her link motion.

A one hundred pound engineer and a one hundred ton locomotive! A little bird chasing an eagle across the sky! Each seemed to exaggerate the other. How different was this mammoth machine from the mountain climbers I had been used to—built so near the ground that to get under them the engineer must lie flat down and crawl.

THE THROTTLE OPENED.

As the great clock in the despatcher's office pointed to 2.55 the driver began to glance at his watch. Then he climbed up into the cab, exchanged oil cans, climbed down, and walked around the locomotive, dropping a little oil here and there—giving her a last finishing touch. Then he put his feet first against the main, then the parallel rods, to see if they moved easily on the pins. Already I had introduced myself to the engineer, and was now on the engine making friends with the fireman. At 2.59 we were all nineteen and one-half feet nearer our journey's end.

Whatever of anxiety I might have felt an hour ago is gone ; and as the proud machine sweeps over switches, through tunnels, under bridges, and through suburban New York, and finally around to the shores of the Hudson, all thought of danger has vanished, and I know that I shall enjoy the ride. Nearly a thousand miles of rails reach out before us, but to me the way seems short. I hear the click of the latch as the engineer cuts the reverse-lever lock, shortening the valve stroke and increasing the speed. As

THE "DE WITT CLINTON," THE FIRST LOCOMOTIVE AND TRAIN EVER RUN IN THE STATE OF NEW YORK. (FIRST TRIP ON AUGUST 9, 1831.)

in the cab. The pointer stood at one hundred and eighty pounds ; the fireman leaned out of the window just behind me, looking toward the rear of the train. Glancing over at the engineer, I noticed that he was looking ahead, and that his left hand was on the throttle. Just as I looked back, the conductor threw up his right hand, the fireman shouted "All right," the throttle flew open, and the first great exhaust seemed to lift the roof from the shed. The drivers are so large—six feet six—that with each exhaust the train moves forward nearly five feet, and with each revolution we are often as he does this he opens the throttle a little wider, until the pressure in the steam-chest is almost equal to the pressure in the boiler. Every time he touches the throttle the swift steed shoots forward as a smart roadster responds to the touch of the whip. When the lever is forward and the stroke is long, the steam flows in at one end of the cylinder, and pushes the piston head to the other end. When this exhausts, another flow of steam enters the other end of the cylinder to push the piston back. The result of this is a continuous flow of steam through the valves, and a use-

less waste of water and fuel. When the stroke is short, the valve moves quickly. With an open throttle the steam darts from the steam-chest, where the pressure is high, to the cylinder; another quick movement of the valve closes the port, and the expanding steam does the rest.

The long, heavy stroke is necessary only in starting trains and on heavy grades.

Absence, we are told, makes the heart grow fonder. The pain of parting is all forgotten in the joy of meeting; and now as we begin to swing round the smooth curves, all the old-time love for the locomotive comes back to me. The world will never know how dear to the engineer is the engine. Julian Ralph says, "A woman, a deer, and a locomotive." The engineer would say, "A woman, a locomotive, and a deer."

CY WARMAN.

FORTY MILES AN HOUR.

Again I hear the click of the latch, and a glance at the ground tells me that we are making forty miles an hour. The scene is impressive. The many threads of steel stretching away in the twilight; the river on one side, on the other a rock wall, and above the wall the vines and trees; the gentle hills beyond the Hudson where the leaves are turning with the touch of time—the end of summer at the death of day!

Now the people along the line begin to look for us: everyone seems to expect us, except two Italian women who are walking near the wall. They hear the whistle, look back, and see the great engine bearing down upon them at a fearful rate. I glance at the engineer, whose grim face wears a frown, and whose left hand moves nervously to the air valve, then back to the throttle.

Panic-stricken the women start to run, but in a moment we dash by them. The wind of the train twists their clothes about them, pulls their bonnets off, while their frightened faces are whipped by their loosened hair. A step on one of the sleepers strikes the basket on the arm of one of the women, and a stream of red apples rolls along the gutter, drawn by the draught of the train. Now the smoke clears from the stack, the engine begins to swing and sway as the speed increases to forty-five or fifty miles an hour. Here and there an east-bound train brushes by us, and now the local which left New York ten minutes ahead of us is forced to take our smoke. The men in the signal towers, which succeed one another at every mile of the road, look for the "Flyer," and each, I fancy, breathes easier when he has seen the swift train sweep by beneath him.

Everything appears to exaggerate our speed, which is now nearly a mile a minute. An ox-team trailing up a little hill serves to show how fast we go. As we sweep by a long freight train, west-bound, it is hard to tell whether it is running or standing still. In fact, we cannot tell until we come up to the locomotive and hear one loud exhaust, and we are gone.

When the whistle sounds, the fireman looks ahead, and if the signals are right, he shouts to the engineer. If the road is curving to the left, it is not always easy for the engineer to see the signal displayed. The fireman even tries the

water. Fifteen years ago that would have cost him his job. "You keep her hot; I'll keep her cool," the engineer would have said at that time. And yet he should be glad to have some one help him watch the water, for nothing brings such lasting scandal to a runner as the burning of an engine. He may run by his orders, but if he drops his crown sheet he is disgraced for life.

DRINKING AS SHE RUNS.

We are now fifty minutes out; the throttle is closed. A half mile ahead is the water trough. When the engine reaches it, the fireman drops a spout, and in thirty seconds the big track trough is dry. When the tank is filled the throttle is opened, the fireman returns to his place at the furnace door, and in a few minutes we are sailing along the line as fast as before. The black smoke curling gracefully above the splendid train reminds me of what Meredith said of his sweetheart:

"Her flowing tresses blown behind
Her shoulders in the merry wind."

THE LAST MINUTES BEFORE THE START.

We have lost a minute or a minute and a half taking water, and now we are nearing a bad bridge—a bridge under repair, and over which the engineer has been instructed, by a bulletin posted in the round house at New York, to pass at ten miles an hour. We are three minutes late, when again we get them swinging round the curves beyond the bridge; for it must be remembered that the Central's track along the Hudson is far from straight, though the road bed is so nearly perfect that passengers in the coaches do not feel the curves. Everyone seems to know that we are three minutes late. The old man with the long-handled wrench, tightening up the bolts in the rails, reproaches the engineer with a sort of "What's-de-matter-wid-yez?" expression, as we sweep by. The man in the next tower is uneasy till we are gone.

We are a hundred miles from New York now, and although I carry a time-card, I am unable to read the names on the stations. Holding my watch in my left hand I tap the case with my right; the engineer shakes his head slowly and holds up three fingers: we are three minutes late. I cross over, take a seat behind the driver, and speaking loud at the back of his neck, express

the hope that we will reach Albany on time.

He says nothing. I cross back to the other side, and as often as he whistles I ring the bell. A minute later he turns to the fireman and shouts: "Look out for her, Jack," at the same time pulling the throttle wide open. Jack knew his business and proceeded to look out for her. Taking the clinker hook he levelled off the fire, shook the grates, and closed the furnace door. The black smoke rolled thick and fast from her stack, then cleared away, showing that she was cutting her fire beautifully. Swinging the door open, the skilled fireman threw in three or four shovels of coal, closed it, and leaned out of the window, watching the stack. The trained fireman can tell by the color of the smoke how the fire burns.

THE CAPTAINS OF THE "FLYER."

The few pounds of steam lost in fixing the fire, and by reason of the throttle being thrown wide open, are soon regained. The pointer goes round to 190, and the white steam begins to flutter from the relief valve at the top of the dome. She must be cooled a little now, or she will pop, and waste her energy. An extra flow of cold water quenches her burning thirst, and she quiets down. How like a woman when her heart is hurt! She must be soothed and petted, or she will burst into tears and sob herself away.

Now we turn into a long tangent, and are

CLIPPING OFF A MILE A MINUTE.

Our iron steed trembles, shakes, and vibrates a little, but aside from the fact that there is some dust, the cab is not an uncomfortable place. The exhausts, that began in the Grand Central station like the explosion of a shot-gun, come so fast, so close together, that they sound like the drumming of a pheasant's wings.

The sun sinks behind the big blue mountains, the shadows creep across the valley, and up to our window comes the faint perfume of the fields—the last scent of summer in the soft September winds. Here and there we can see the lamps lighted in the happy homes by the Hudson, while the many-colored signal lamps light up our way.

Not long ago I stood for the first time on the deck of a steamer bounding over the billowy bar at the mouth of the Columbia River, and was filled with a reckless joy. Looking down at the little woman who hung to the railing near me, I beheld a face radiant with rapture. "How is it?" I asked. "It's worth drowning for," was her answer; and so I reckon now. Taking into consideration all the risk, and the fact that I must remain on this narrow seat for twenty hours, yet I am forced to confess that so grand a trip is but poorly paid for.

A BIT OF NERVOUSNESS AT THE CURVES.

If I am at all uneasy it is only when turning the slightly reversed curves where the way changes from a two to a four track road, or back. Plain

curves are all well enough. But it does not seem quite right to shoot her into those kinks at a mile a minute. Yet after I have seen her take two or three of these, I rather enjoy it. She sways to the right, to the left; then, with a smart shake of her head when she finds the tangent, she speeds away like the wind.

IN THE "CAB" OF NO. 898. JACK "LOOKING OUT FOR HER."

Every man in the employ of a great railroad company plays an important part. These smooth curves, perfectly pitched, are the work of an expert trackman. The outer rail must be elevated according to the curve, and with full knowledge of the speed of the trains that are to use the track. I have seen a train on a heavy grade, drawn by two strong locomotives, when nearly stalled on a sharp curve, lift a sleeper from the middle of the train and turn it over. It was because the curve was too sharp, and the elevation too great, for so slow a train.

The engineer looks across the cab and smiles, and I know that he has taken my hint about reaching Albany on time good-naturedly; we understand each other. In his smile he asks: "How do you like it?" and I answer by raising my right hand with all save the first finger partly closed, and with a slight turn of the wrist give him that signal so well known to train and engine men, which means "All right; let her go."

We were due at Albany at 5.45, and at 5.40 the fireman stepped over and shouted in my ear: "That big building at the end of the stretch there is the capitol of the State;" and the "Exposition Flyer" rolled into Albany on time.

A FRESH ENGINE.

An extra sleeper, well filled with the good people of the capital, was switched to our train. Saying good-by to the old crew I swung into the cab of the 907. The engineer shook hands warmly, said he expected me, introduced me to his fireman, showed me a comfortable seat directly behind him, and opened the throttle. This locomotive was nearly new, black and beautiful.

I noticed that we pulled out a few minutes late. There is a heavy grade out of Albany, and though we had a helper pushing us over the hill, it seemed as if we would never get them going; and when we did, we were six minutes behind our card time. The fireman, with whom I sympathized, worked hard, but he was handicapped. The hard pounding up the hill had torn holes in his fire. His furnace

door worked badly—it would not stay open; and to make a misstroke with a single shovel of coal on such a train is not without its bad effect. The gauge lamp bothered him. Twice he had to climb to the top of the big boiler and re-light it. The additional car, too, told on the locomotive, and it seemed impossible, though the crew worked faithfully, to get a mile a minute out of her. When the engineer shut off to slow for a station, running without steam, she swept over the steel track as smoothly as a woman rides on roller skates, making little more noise than a coach. She was the smoothest rider and the poorest "steamer" of the lot; but it does not follow that with all things working well she would not steam, nor was her crew at fault. But so important are the moments on a train like this, that the least mishap is as fatal as for a trotting-horse to slip in the start.

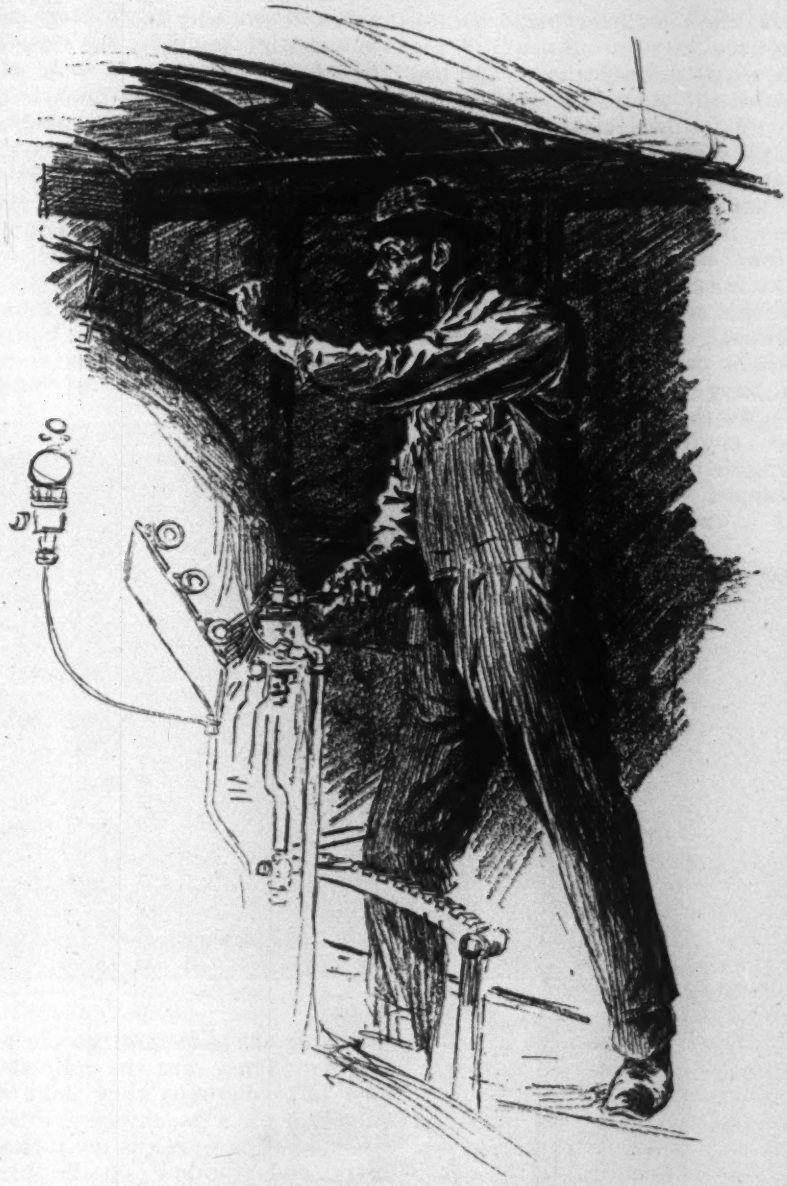
A number of little things, including a bad stop at a water spout, put us into Syracuse six minutes late; and the gentle and gentlemanly engineer, for whom I was really sorry, showed plainly his embarrassment.

A SECOND CHANGE OF ENGINES.

A jolly-looking young man was the engineer of the 896. This crew was a little remote, I thought, at first. But when they had seen my credentials they thawed out; and although we left eleven minutes late, the ride to Buffalo was a delightful one. Just as we were pulling out, one of the black boys from the "diner" came to the engine with a splendid luncheon, sent over by Conductor Rockwell. We were soon going. Holding the plate on my lap, I began to devour the eatables; but as the train began to roll about, I was obliged to throw the luncheon out of the window, almost losing the plate as I did so. But I held to a half-gallon pail which was nearly full of steaming coffee. I asked my friends to join me, but they shook their heads. The engine rolled more and more, as did the coffee; and the boys laughed as I stood tiptoe, taking one long drink after another. I passed the pail to the fireman, who was about to dash it away; but, catching scent of the coffee, paused, and passed the pail up to the engineer, who took a good drink. The fireman then took a good drink too, and would have emptied the pail; but I touched him on the shoulder, and he passed it to me. I took another drink, all hands smiled, and we settled down to business.

I had been riding on the fireman's side for half an hour when the jolly

THE "FLYER" AT SIXTY MILES AN HOUR.



SHUTTING OFF STEAM AND PUTTING ON THE BRAKES.

driver motioned me over, and I took a seat behind him. This locomotive was not very new, but she was a splendid "steamer." The fireman appeared to play with her all the while. The track was straighter here, but not so good. This made no difference with the bold young man at the throttle.

"How old are you?" said I.

"Twenty-five."

"How long have you been running?"

"Twenty-two years," he said.

I don't know whether he smiled or not, for I saw only the back of his head. These men on the "Flyer" seldom take their eyes from the rail. I expressed anew a wish that we might be able to make up the lost time.

"I think we shall," he said, and he

pulled the throttle lever back toward the tank.

It was nearly midnight now, and the frost on the rail caused the swift steed to slip. When we had reached the speed of a mile a minute, and gone from that to sixty-five miles an hour, I thought she would surely be satisfied; but every few minutes her feet flew from under her, and the wheels revolved at a rate that would carry her through the air a hundred miles an hour. The engineer stood up now, with one hand on the throttle, the other on the sand lever; for it is not quite safe to allow these powerful engines to slip and revolve at such a rate.

SEVENTY-FIVE MILES AN HOUR.

"We've got twenty-eight miles up hill now," said the engineer, as he unlatched the lever and gave her another notch. The only effect was a louder exhaust, and a greater strain on the machinery. It seemed the harder he hit her, the better she steamed; and we went up the hill at almost a fifty-mile gait.

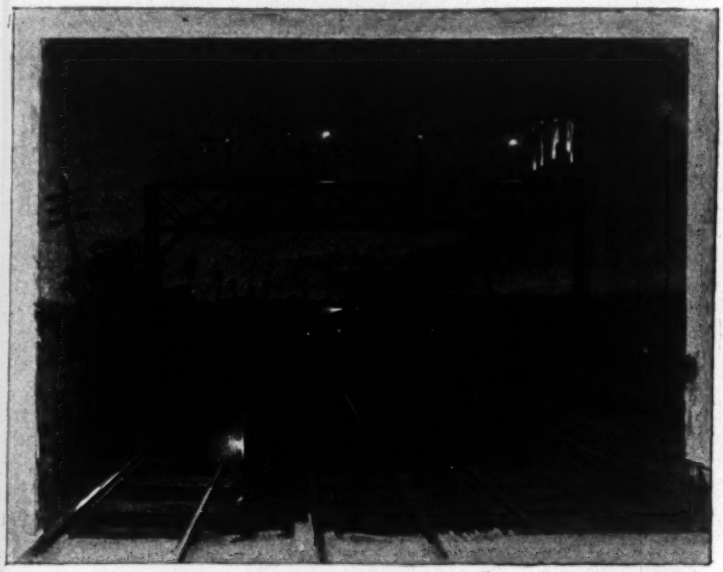
"Now it is down hill to Buffalo," said the driver; and, as the speed increased to sixty-five, seventy, and then seventy-five miles an hour, the sensation was delightful.

"We've got thirty-six miles now, and thirty minutes to make it in," said the man at the throttle.

"And you've got your nerve also," said I in a whisper. Orchards, fields, and farms sweep by, and the very earth seems to tremble beneath our feet. The engine fairly lifts herself from the rail, and seems to fly through space.

We stopped at Buffalo at 11.39, just one minute ahead of time, and this remarkable run was made over the poorest piece of track on the main line of the New York Central and Hudson River Railroad. Eight hours and forty minutes, and we are four hundred and forty-four miles from New York.

The men who manned the 898 and the 907 are sound asleep, and this last crew will be so within an hour. The flagman and brakeman meet for the first time since they left New York, come forward to ask how I liked it, then drift into the station, "jolly up" the girl at the lunch counter, pay for their luncheon, "stand" her "off" for a couple of cigars, and go out into the night. These are the jolly sailors of the rail. Perhaps they have worked together for a dozen years, in sun and sleet, skating over the icy tops of box-cars, and standing on the bridge at midnight. For this they have been promoted to the smoothest run on the road.



A CLEAR TRACK FOR THE "FLYER."

The conductor swings his hand-grip, and whistles as he strolls into the station and registers. "Train 41, on time." The wary watchman in the despatcher's office, who can close his eyes and see every train on his division at any moment, lights his pipe, and puts his feet upon the table, glad to know that the most important train on the

line has reached its destination. Mr. H. Walter Webb, at the club, the playhouse, or at home, glances at his watch, and as he has received no notice of delay, knows that his pet train—the "Exposition Flyer"—has been delivered safely to the Lake Shore. While this was being accomplished, the one hundred and one passengers laughed, chatted, ate dinner, and went to bed.

HOW THE WORK OF A RAILROAD IS DIVIDED.

It might be of interest to pause a little in our journey here, and give some account of how a great railroad is operated—each man going about his business, and doing what he has to do with so little noise.

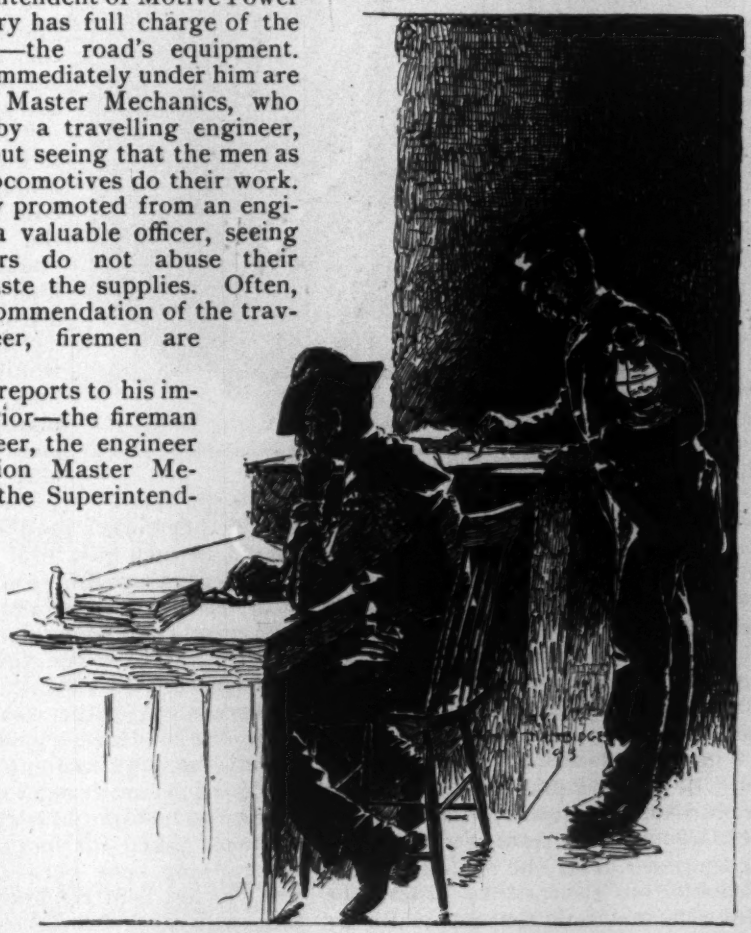
The Superintendent of Motive Power and Machinery has full charge of the rolling stock—the road's equipment. The officers immediately under him are the Division Master Mechanics, who are assisted by a travelling engineer, who goes about seeing that the men as well as the locomotives do their work. He is usually promoted from an engineer, and is a valuable officer, seeing that engineers do not abuse their engines or waste the supplies. Often, upon the recommendation of the travelling engineer, firemen are promoted.

Every man reports to his immediate superior—the fireman to the engineer, the engineer to the Division Master Mechanic, he to the Superintendent of Motive Power. These officers and men are in the Motive Power Department; they are in the Operating Department also.

At the head of the Operating Department is the Division Superintendent. This officer appoints the train-masters, yard-masters, and station agents. It is usually with his indorsement that brakemen are promoted to be freight conductors, and freight conductors to passenger runs. The engineer, especially when on the road, is responsible to the Division Superintendent.

Next in importance is the Traffic Department. If the road has a General Traffic Manager, the work will be in the hands of a General Freight and a General Passenger Agent. Neither the section boss, the local agent, nor the conductor can issue transportation complimentarily.

There are also the Engineering, the Auditing, and Track Departments. There is a Superintendent of Bridges



CONDUCTOR REGISTERING AT END OF RUN.

and Buildings. There is the General Store Keeper, in charge of all building material and supplies. Every pound of waste, every gallon of oil, every nut or bolt, is charged to the locomotive for which it is requested; and at the end of the month the Master Mechanic knows what each engine has cost the company; how many miles she has made to the ton of coal, the pint of oil, and the pound of waste. So, you see, there are other records an engineer must make besides a record for fast running.

THE CAPTAIN OF THE TRAIN.

The conductor is the captain of the train, and so long as he is consistent his talk "goes." In addition to his duties as collector of revenue, he must, especially on a single track road, read and check up the register, to see that all trains due, and having rights over his train, are in. If we except the despatcher, the conductor is the best judge of orders in the service. By the use of two carbon sheets, the operator receiving an order for a train will make three copies; one to file in the telegraph office, one for the conductor, and one for the engineer. The conductor will examine the order, and, if it is correct and proper, sign his name and the name of the engineer. He should go to the head end and read the order to the enginemen. If the brakemen hear it, so much the better. It would be a good plan if all these men were furnished with a copy of the order. The conductor now returns to the train. The engineer does the running, but if he should run contrary to orders, the conductor may pull the automatic air valve and stop the train.

H. WALTER WEBB, THIRD VICE-PRESIDENT N.Y.C. R.R.

AN ENGINEER NEVER ASKS FOR MORE TIME.

The writer of a recent article says: "It may be possible to make such mechanical improvements as will permit a rate of one hundred miles an hour, but where are the men who will run these trains of the future when they are built?"

This reminds me of a conversation which took place in my hearing thirteen years ago, in the shadow of the Rocky Mountains. The men talking were a train crew, waiting on a side track for the Leadville express, which had just begun to operate between the carbonate camp and Colorado's capital.

"They are going to build a line over Marshall Pass, to Salt Lake," said the conductor; "but I'll husk punkins 'fore I'll run a train there."

"You think you would," said the long, lank brakeman, taking the stem of a black clay pipe from between his teeth. "I want t' tell you that if they build a road to Pike's Peak, they'll be men just fool 'nough to go there and railroad."

In less than three years these very men were running over the mountain, and in less than ten years we saw a railroad to Pike's Peak. It makes no difference to these fearless fellows where the road runs—up a tree or down a well—so long as there are two rails. Bring on your thunder birds; never yet in the history of railroading has an engineer asked for more time. When the running time between New York and Chicago is fifteen hours, the enginemen will work harder for promotion than they do now. We have now not

only the men to run these trains, but we have the motive power. With a track as nearly perfect as engine 999, for example, herself is, she will make her one hundred miles an hour. This locomotive is the plain single-cylinder, eight-wheel type of engine, which has been a favorite with enginemen for the past fifteen years. Manifestly, Mr. Buchanan has very little faith in the newer compound locomotives which have been claiming the attention of managers of late. The Rio Grande Western, one of the swiftest little lines in the West, has been making a thorough test of the compound engine. It finds that with an ordinary train they show no saving of fuel, but with a heavy train they perform beautifully.

W. BUCHANAN, SUPERINTENDENT OF MOTIVE POWER N.Y.C. R.R.

FROM OCEAN TO OCEAN IN EIGHTY-FOUR HOURS.

When the next new ocean steamer is placed upon the Atlantic, she will probably shorten the time from Queenstown to New York to five days. That would be six days to Chicago, and seven days from Queenstown to the summit of Pike's Peak. There is no excuse for squandering five days in a journey from New York to San Francisco. This would make a comfortable time-card:

New York to Chicago	19 hours
Chicago to Denver	23 hours
Denver to Ogden	19 hours
Ogden to San Francisco	23 hours

Total, eighty-four hours, or three days and a half, from New York to the Pacific Coast. The same time can be made going east, for actual running time is reckoned, no allowance being made for difference in time. A sleeping car attached to the fast mail leaves Omaha every evening at six-thirty, and arrives in Denver at seven-thirty the next morning, five hundred and sixty-five miles. This run is made across the plains, where the traffic does not justify the expenditure of a very considerable amount of money on track. There is never a night that this train does not reach the speed of a mile a minute. Every day this fast mail train, via the Burlington to Omaha, and the Union Pacific to Ogden, makes the run from Chicago to Denver in a little over twenty-four hours.

Either the Rio Grande or the Santa Fé, in connection with the Rio Grande Western, can take you from the Queen City of the Plains to Ogden in nineteen hours. The Southern Pacific has a very good track and splendid equipment, and they should be ashamed to take thirty-six hours of a short life to run a little over nine hundred miles. They can make the run in twenty-three hours, and do it easily. What we want is better track. The locomotive of to-day will do for some time.

We want, also, a high regard for the lives of passengers on the part of railroad officials and employees. Much as

DO YOU UNDERSTAND IT?

I would like to, I am unable to offer a reasonable excuse for some of the collisions which have cost so many lives. It was not to be expected that the railroads could handle the multitudes to and from the World's Fair without injuring a number of people, and without some loss of life. But if every section of a train had been kept ten minutes behind the section it followed, there could have been no rear-end collisions such as we have heard of during the past three months. Every train should have proceeded upon the theory that it was followed closely by a special, and the flagman should have been instructed to flag without ceasing. Better be in Chicago ten minutes late than in eternity ten years ahead of time.

A locomotive should never cross the turn-table without a box of sand, and the driver should see that the pipes are open. Enough sand to fill the sailor hat of a summer girl will often save a whole train.

DOING DUTY EVEN IN SLEEP.

Of course there will always be wrecks so long as mortal men tend the switches and hold the throttles, for it is human to err ; but the mind should be on the work at all times. No man should be compelled, or even allowed, to remain on duty more than twelve hours, or eighteen at the most. After twenty-four hours the eyes become tired ; after thirty-six hours the brain is benumbed.

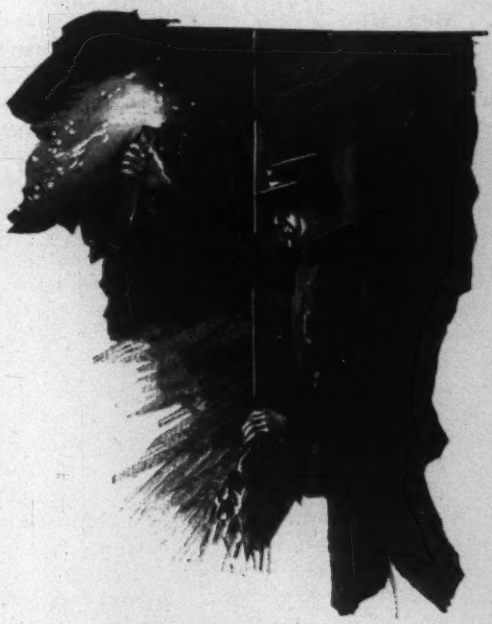
I have been on a locomotive forty hours, and all desire to sleep had left me, but I felt that I was dreaming with my eyes wide open. The fireman had to speak twice to get my attention. I was not asleep, but my mind was away, and when called to note a signal it returned reluctantly. The brain seems to feel the injustice of such abuse, and simply quits—walks out. Of course, it can be compelled to work, but it will not work cheerfully or well. Just as any other striker may be forced to submit to a decrease in wages or an increase of hours, so it may work, but will "soldier" enough to put its employer on the losing side.

After such a strain I have gone to bed at eight in the evening, and have rolled and tossed and beat about until midnight, unable to sleep. Once I dozed for a few minutes, and then sat up in bed, pulled my watch from under

THE PROTECTOR OF THE REAR OF THE TRAIN.

my pillow, held it to the open window where the full moon fell upon its face, and said, so loud that I was wakened by my own voice: "Nine fifty-five; No. 10 is due here at ten-one." Half asleep, I had dreamed that I was on the side track at Chester, waiting for the east-bound express. How forcibly the time-card rules are photographed upon the brain! Even in my sleep I was "in to clear six minutes" before the opposing train was due.

It so happened that the night train from Leadville was due in Salida at about that time. I could hear it roaring down through Brown's Cañon, and then I heard the long, wild wail of the whistle, echoing along the sides of the Sangre de Cristo range. I saw the head brakeman open the switch, dropped out on the main line, saw the signal from the rear-end when the switch was closed, and drifted away down the valley of the Gunnison—to the vale of sleep. A yard engine screamed for brakes—that short, sharp shriek that tells of danger and hints of death. I looked out of the window and saw the great white quivering head-light bearing down upon me. Twice in reality I have stood in the shadow of death, and I know that at such times the mind sweeps over a quarter of a century in a second or two. We were on the side track; our train was standing. Some one had left the switch open, and the express was heading in upon us. There was nothing to do but to leap for life. As I threw my feet out of the window to jump, the cold air awakened me, and I saw before me, not a head-light, but the big, bright moon that was just about disappearing behind the mountains.



DROPPING AN EMERGENCY SIGNAL.

And this is the way I slept until six-thirty, when the caller came. I signed the book, and at seven-thirty was on the road again.

THE ENGINEER'S DAY.

Where there are no regular runs, and the men run "first in, first out," it is almost impossible to always have just work enough to go round. The men are as much to blame as the management for the overwork of engineers. They are paid on these mountain roads four dollars per day. Days are not measured by hours, but by miles. Forty-four mountain, or eighty-five valley, miles is a day on freight. On passenger service one hundred and five valley miles is a day's work. The point between valley and mountain mileage is passed when the grade exceeds two hundred feet to the mile. Men have made sixty days in a month on these mountains, and they have earned the two hundred and forty dollars; but they should not have been allowed to do it.

One young man, Hyatt by name, used to threaten to put himself into a receiver's hands when he made less than forty days a month. Fifty days was fair business, but sixty suited him better. He kept it up for three years, collapsed, and had to be hurried out of the country. I don't know that he ever wholly recovered. He was a fine fellow physically, sober and strong, or he would have collapsed sooner. I am afraid the older engineers are a little selfish. When the management pro-

poses to employ more men, or promote some fireman, there is usually a protest from the older runners.

In the general instructions printed in the New York Central time card, we find the following: "The use of intoxicating drink on the road, or about the premises of the corporation, is strictly forbidden. No one will be employed, or continued in employment, who is known to be in the habit of drinking intoxicating liquor." They might have added "on or off duty," just to make it plain and strong. A man who was drunk last night is not fit to run a train or engine to-day. Men who never drink should be encouraged, and promoted ahead of those who do. I have always opposed the idea of promoting men strictly in accordance with the length of time they have served in any capacity. If all firemen knew that they would be promoted when they had fired a certain number of years, there would be nothing to strive for. They would be about as ambitious as a herd of steers who are to be kept until they are three years old, and then shipped.

The best engineman has been a fireman; the best conductors are made of brakemen; the best officials are promoted from the ranks. Mr. John M. Toucey, General Manager of the New York Central, was once a trainman. President Newell, of the Lake Shore, used to carry a chain in an engineering corps on the Illinois Central. President Clark, of the Mobile and Ohio, was a section man; afterwards a fireman. Another man who drove grade stakes is President Blockstand, of the Alton. Allen Manvill, the late president of "the largest road on earth," was a storehouse clerk. President Van Horne, of the Canadian Pacific, kept time on the Illinois Central. A man named Towne, who used to twist brake-wheels on the Burlington, is now Vice-President Towne, of the Southern Pacific. President Smith, of the Louisville and Nashville, was a telegraph operator. Marvin Hughitt, of the Chicago and Northwestern, began as a telegraph messenger-boy. President Clark, of the Union Pacific, used to check freight and push a truck on the Omaha platform. The Illinois Central, I believe, has turned out more great men than any other road. President Jeffrey, of the Denver and Rio Grande, began in the Central shops, at forty-five cents a day.

UNDER WAY AGAIN—FROM BUFFALO WESTWARD.

But this has been a long detour, and my wait at Buffalo was really a very short one. The 896 gave place to the 293, and in a few minutes we were under way again.

The locomotives used by the New York Central were designed by Mr. Buchanan, Superintendent of Motive Power. They consume a tank of coal over each division, and drink up thirty-six hundred gallons of water an hour, or nearly a gallon a second. A number ten monitor injector forces the water from the tank into the boiler. When I stepped from the Central's magnificent hundred-ton locomotive to the Lake Shore's little McQueen, with her five foot ten wheel, the latter looked like a toy.

I had not heard so much of the Lake Shore and Michigan Southern, over whose line we were now to travel, and was agreeably surprised to find such splendid track. The 293 put a mile a minute behind her with a grace and ease really remarkable. The lamps have all been blown out in the farmhouses, and the world has gone to sleep. The big white moon, that came up from the Atlantic as we were leaving the metropolis, is dropping down in the west.

The Lake Shore is remarkable for its short divisions and long tangents. "That's the east-bound 'Flyer,'" said the fireman, as a bright head-light showed up in front of us; and in a minute she dashed by. I had just begun to get used to the bell when we stopped at Erie—on time.

A flat-topped Brooks locomotive, number 559, with a big, roomy cab, a youthful driver, a six-foot wheel, and an enthusiastic fireman who knew his business (as they must on this run), backed up to our train. "You'll have this class of engine all the way to

Chicago," said the engineer. "They were built for these trains." They are but little heavier than the McQueen, and splendid "steamers," good riders, and run like a coyote. The fireman found time to show me the home of the dear dead Garfield, and made me shudder when he pointed to the Ashtabula bridge, where so many lives were lost some years ago. I was glad to think that wooden bridges and poor roadways were things of the past.

WHAT AN ENGINEER DOES IN DANGER.

We are making a mile a minute. What would the driver do if he saw before him a burning bridge, or the red lights of a standing train? His left hand is on the throttle; he would close it. Almost in the same second his right hand would grasp the sand lever, and with his left he would apply the brakes. With both hands, in about the third second, he would reverse the engine. Perhaps he has heard that old story that to reverse a locomotive is to increase her speed—that a bird will fly faster with folded wings: he may pretend to believe it; but he will reverse her just the same. If she has room she will stop. Even without the aid of the air-brake she will stop the train, if the rail holds out. I ought to say that, the instant he reverses the engine, he will kick the cylinder cocks open—otherwise he may blow off a steam-chest or a cylinder head.

THE CONDUCTOR'S SIGNAL TO THE ENGINEER—ALL RIGHT; GO AHEAD!

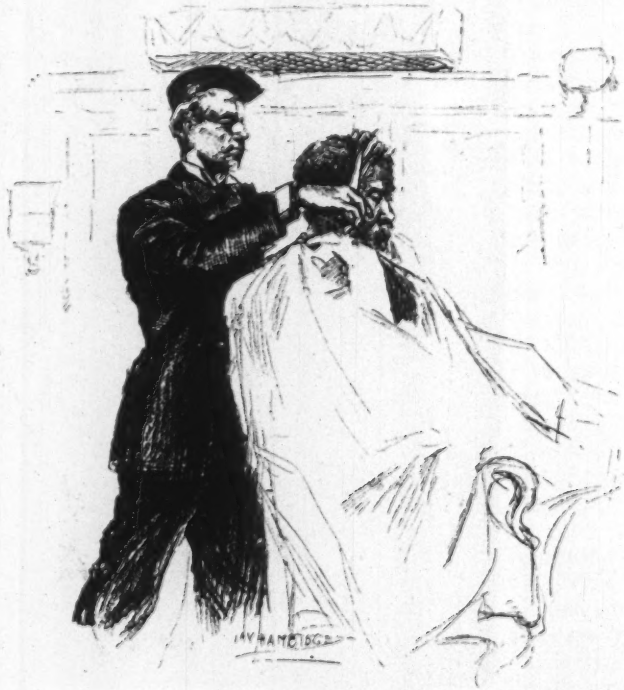
The engineer will risk his life to save his train. Of this the travelling public may rest assured. Even though he may be, or may have been, the greatest coward living, a man who has run a locomotive for a number of years will do, in the face of a great danger, just what I have described. To say that he does this mechanically is not to accuse him of cowardice. It is harder to enlist than to march to the music and keep up with the crowd when the battle is on. He does not, mechanically, say good-by to loved ones, and step into the cab knowing that he must face danger, even death. The mother seeing her child fall in front of a cable car, without stopping to reason what is best to do, or taking thought of the risk, springs to the rescue. The engineer seeing an open switch reasons no more, but does that which human instinct tells him to do. It was my business, for a number of years, to read and write about railroad people; and if an engineer ever left the cab without first making an effort to save his train, I have failed to hear of it.

Having met and passed the east-bound "Flyer" we have absolute right of track to Chicago. All north or east bound trains have rights of track over trains of the same or inferior class going in opposite direction. The terms passenger or freight are descriptive, and do not refer to class. All trains are designated as regular or extra. The regular trains are those on the time-cards; the extras are run by special telegraphic orders, and always carry white flags or white lights on the locomotive. An extra train composed of passenger cars is usually called a "special;" of freight cars an "extra;" and they must always be kept off the time of regular trains of whatever class.

POUNDING OUT OF CLEVELAND.

"And this is Cleveland," said I, as I looked from the roomy cab of another Brooks, "the home of the Grand Old Chief?" I had hoped, by showing that I knew Mr. Arthur, to put myself in touch with the driver; but a prophet is never appreciated at home, and the only reply was a good-natured grunt and a sarcastic smile.

It is hard pounding out of Cleveland, and I wonder that a yard engine does not give us a little start. It is almost morning now. Just the time for a wreck. More collisions, I believe, occur between the hours of two and six A.M. than in the other twenty hours of the day. Now for the first time I feel just a little tired. Just once I closed my eyes, and it seemed to rest them so that I kept them closed for a moment, until I felt myself swaying on the seat. Then I opened them wide, for we were making more than a mile a minute, and to sleep was to run the risk of falling out of the open window at my left. That was the only time on the whole trip that I felt the least inclination to sleep.



THE BARBER OF THE "FLYER" AT WORK.

At Toledo we changed engines and train crews, and in the gray dawn of morning pulled out for Elkhart, Indiana. The 94 had seen considerable service; she was not very beautiful, and having a flat spot on one of her wheels was a little lame. The hostler "slid" her, the fireman said; but when the serious-looking engineer got her headed down the sixty-eight mile tangent, the flat spot and the little limp gave us no more trouble. The speed was so great that she touched only the high places, and the ride down the long stretch of straight track was a delightful one. The sun, that I had seen drop down behind the Catskills, as it seemed, but a few hours ago, swung up from the Atlantic, and shone on the Hoosier hills, "where the frost was on the punkin and the fodder in the shock." The trainmaster, from Toledo, came over to ride with me, and showed me where the daring train robbers held the train up in an open prairie, on a straight track. We held our watches on the 94, and found that she made ten miles in eight minutes, and eleven miles in eight and one half minutes. Old and lame as she is, she manages to limp over eight thousand miles a month, at an average rate of a mile a minute.

The 94 reminded me of a jack rabbit. When he gets up he is so stiff and lame that a well-trained greyhound is ashamed to chase him. He will wabble about, stumble and fall, put down three and carry one, until the dog is ready to eat him. Then he lays his ears down along his spine, and skims over the sagebrush with the speed of the wind.

IN THE FLYER'S KITCHEN.

At Elkhart the 160 backed on to our train. The conductor came running forward with a manifold order, and, handing a copy to the engineer, they both began to read. "Put up green signals," said the driver, and the fireman planted a small green flag on either side of the front end of the loco-

motive, and we were off for Chicago. These flags did not affect us or our train ; they only showed that something was following us with the same rights that we enjoyed. As often as we passed a train or switch-engine the engineer sounded two long and two short blasts of the whistle, and the other engineers answered with two short, sharp whistles, saying that they understood the signals.

hundred and one miles in two hours. When we were acquainted, and he had seen my old worn license as a locomotive engineer, he called me over to his side. Finding myself, for the first time in my life, at the throttle of a locomotive making a mile a minute, I was almost dizzy with delight. Fields and farms flew by, and the mile posts began to get together like telegraph poles.

DINNER TIME ON THE "FLYER."

The 160 was an easy rider, and as she slipped down the smooth steel track, the run over the last division was no whit less glorious than was our midnight ride on the Central.

OUTFLYING THE BIRDS.

The cheerful driver appeared to regard his day's work as a pleasant morning ride down to Chicago, one

A prairie hawk flying down the track became bewildered, and barely saved his life by a quick swerve as the front end of the locomotive was about to strike him ; his wing brushed the signal lamp on my side. Little brown birds, flying in front of us, dashed against the cab windows, fluttered from the running board, and dropped to the ground dead.

While she was making her mile in fifty to fifty-five seconds, the train inspector came over the tank, bearing a tray which held a steaming breakfast for the "dead-head," in the cab. "Put it on the boiler head" shouted the engineer, and then I learned what the flat top was intended for. Placing the tray on top of the boiler, I stood up in the corner of the cab and ate my breakfast, and enjoyed it at the rate of a mile a minute and a dollar a meal.

AT CLOSE OF DAY ON THE "FLYER."

Looking back along the side of this remarkable train, I was surprised to note that the heavy Wagner cars, owing to hydraulic buffer equipment, swayed not to exceed two inches out of a straight line when we were making seventy-five miles an hour. I have never travelled in the cars of this swift train, but judging from the way the locomotives ride, the coaches must be as easy as a sleigh. We placed the coffee cup outside the tray on the jacket, which is almost as smooth as glass, and it rode there for a half hour, when the inspector took it off.

Nobody ever heard of a person drowning on air, and yet I believe it is possible. When we were running at the rate of seventy-five or eighty miles an hour, I closed my mouth and leaned out of the window. The force of the air was so great that it actually strangled me; I tried it again and again, with the same result. The air drove into my nostrils with such force that I invariably opened my mouth to breathe; and then the air drove down my throat, and compelled me to draw back into the cab. Now, when we breathe water into the nostrils, we always throw open

the mouth, only to take in more water and strangle the worse. If, when you had put your head out of a locomotive cab moving at seventy-five or eighty miles an hour, a strong hand seized it and held it there, you would, I believe, actually drown.

In California they do not say the oldest mission, the largest orchard, the biggest tree "in the State," or "in the Union," but "in the world." I shall say this is the swiftest and safest train on earth. That it is the swiftest, the time-card proves. It is the safest, for the reason that, from the moment the "Exposition Flyer" leaves New York, every man in the employ of the New York Central and the Lake Shore railroads, including Dr. Depew and Mr. John Newell, look out for her until she whistles into Chicago. If the "Flyer" loses over five minutes, the fact as well as the cause of the delay is wired at once to Mr. Edgar Van Etten, the General Superintendent. Everything is out of the way, and switches set for her ten minutes before she is due. Ordinarily, when a passenger train is late, her danger is correspondingly increased. Not so with the "Exposition Flyer;" she has the right to the rail until she is able to use it, or until she becomes twelve hours late. When she is one minute late, all who are watching and waiting for her know it, and their anxiety increases until she is heard from. No train on the road runs closer to her time-card than the "Flyer." Nearly all the ugly wrecks are rear-end collisions, but there is no danger from that source to this train. Nothing short of a thunderbolt can catch her.

But, behold, here in full view are the glistening domes of the White City and the mammoth, high-mounted Ferris wheel! The last of nearly a thousand miles of steel has slipped from under our faithful steed, and at precisely ten o'clock A.M. we stop at the Chicago station—on time. It has taken twenty hours, eight engines, and sixteen enginemen to bring us through, and it has been a glorious trip—the best of my life.

ON TIME AT CHICAGO.

FRANCIS PARKMAN.

By Julius H. Ward.

WHO would have thought, fifty years ago, that a member of the Harvard class of 1844, then just turning twenty-one, more interested in life in the woods than in his books, would grow up to be the historian of "England and France in North America"? There was nothing in the early environment of Francis Parkman, or in the special antecedents of his family, that marked him for a literary career. His father was a man of theological tastes and culture, but not a writer of books; and his mother, from whom he inherited his delicate sensibility, was in no sense given to letters. His grandfather, Samuel Parkman, was the richest merchant in Boston at the beginning of the century; and the ample colonial mansion which he built on one corner of Bowdoin Square was famous as a centre of hospitality and for its garden and grounds. This estate was inherited by his son, Doctor Francis Parkman, and here the historian of the French occupation, Francis Parkman, Jr., born September 16, 1823, spent his childhood. The member of his family who can best be named as a literary ancestor was Reverend Ebenezer Parkman, his great-grandfather, who was for fifty-eight years the first minister of Westboro', and whose acute observation, dignified reserve, and large humanity were reproduced in the writings of his great-grandson.

Francis went to live with his maternal grandfather on a farm in Medford when he was seven years old. It bordered on an extensive tract of land long known as Middlesex Fells and covered with a stunted growth of forest. Francis was supposed, in these tender years, to go to school to Mr. John Angier, but he spent his time chiefly in hunting for chipmunks and birds, and in running wild in the Fells. His love of the woods was a passion, and the first books that fell in his way were the stories of Indians who lived in them. In his twelfth year he was taken back to Boston, and prepared for Harvard in the school now known as Chauncy Hall. But his passion for the Fells was unconquerable, and his holidays and

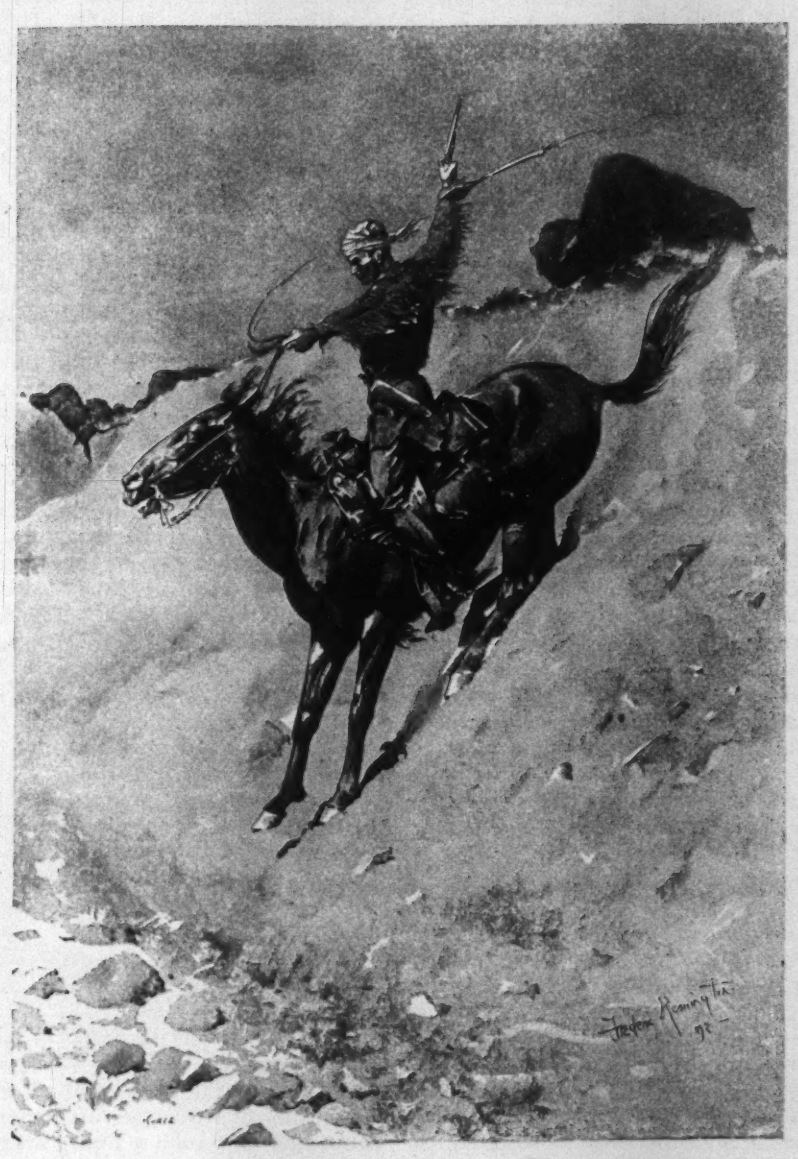
THE BOWDOIN SQUARE HOUSE, PARKMAN'S BIRTHPLACE.

vacations were chiefly spent in hunting and roving in the woods.

His first conscious interest in books for their own sake came in his fifteenth year. When he began to read the English poets Scott and Byron, his imagination was kindled, and a new world was opened to him. It was the world of ideas that awakened his dormant faculties. Henceforth two impulses were to control him. One was to do and to dare everything that is possible to a high-strung and impulsive youth, and the other was to cultivate the literary tastes that had been awakened. He could be a scholar, or he could lead a life in which he had his own freedom. When he entered Harvard, in his seventeenth year, he was neither more advanced in study nor more mature than others of his age. What was distinctive and characteristic of his early boyhood came out as a directing influence. He demanded his freedom. He would live his own life; and after his freshman year he had a room by himself, fitted up to suit his own tastes. It abounded in rifles, and looked more like a sportsman's than a student's home. It was against the laws of the college for students to have firearms in their rooms, and by breaking this rule Parkman had some trouble with the faculty. He still took his holidays and vacations in the woods, and the tougher and harder the experience was, the better he liked it. In his freshman year he spent a summer vacation in northern New Hampshire, making the ascent of Mount Washington in 1841, by the Crawford bridle path, and then proceeding to the Connecticut lakes. From that point he and a classmate and a native guide pushed on forty-five miles through the unbroken wilderness, until they came to the headwaters of the Magalloway River. Where they struck it, it was a mere brook, not more than six feet wide; and the only way in which they could reach civilization again was to descend the stream. They constructed a canoe of birch-bark, which they lost in the rapids, and a raft which they then built was torn in pieces in the same way. They passed through some rough experiences, but Parkman, then in his eighteenth year, was vigorous and hardy beyond his years, and did not know fear. His temperament was that of restless activity.

About the time he entered upon his sophomore year, Parkman began to feel promptings toward a literary career, and his thoughts early fixed upon a history of "The Seven Years' War," a subject which had not then been touched by any writer, and which may have been suggested by the fact that George Bancroft had already begun the "History of the United States," having published his first volumes. It was an unknown period in American history, and one not only congenial to his tastes, but within the limits of his gifts. The notable thing was, that a youth of eighteen, to whom the world of letters was just opening, should have reached out to this field, and that even in college he should have directed his studies in the channels best fitted to prepare him for it. The novels of Cooper and Scott were always in his hands, and he was more familiar with them than with the classical authors it was his duty to read. At Harvard, if not a profound scholar, he was president of the Hasty Pudding Club, and had the intimate companionship of men of tastes similar to his own. President Quincy was then the strong man of the faculty, but the institution lacked instructors who gave it character. It was a good place for a young man to work out his own ideas, and Parkman began here the study of English and the reading of Burke, who was his master in English style. What he did was to learn how to write.

In his junior year he was badly hurt by a fall in the gymnasium, which affected the action of the heart. His physician ordered a trip to Europe, which occupied a good part of his senior year, and was of great importance in widening his range of thought and in influencing his future life. He travelled chiefly in Sicily and in Italy. He met Theodore Parker in Naples, and with his classmate, William M. Hunt the artist, travelled through the Apennines on a donkey. During Holy Week he was in Rome, where he entered a Passionist convent, in order



PARKMAN'S ADVENTURE WITH A BUFFALO. FROM "THE OREGON TRAIL," COPYRIGHTED, 1892, BY FRANCIS PARKMAN. PUBLISHED BY LITTLE, BROWN & CO.

that he might the better understand the working of similar institutions in Canada. After he had studied the conventual life as much as he cared to, he departed, and returned to Harvard, to be graduated with his class in 1844.

The purpose to be the historian of the French colonization in America had now become the absorbing interest in his life. His family position was such that he could choose what he would do and follow his own tastes, but beyond his enthusiasm for an historical work which lay indefinite before him, and for which he had not even tested his fitness, what reason had he to devote himself to literature? The question of deciding what to do had already been settled in his case by a certain convic-

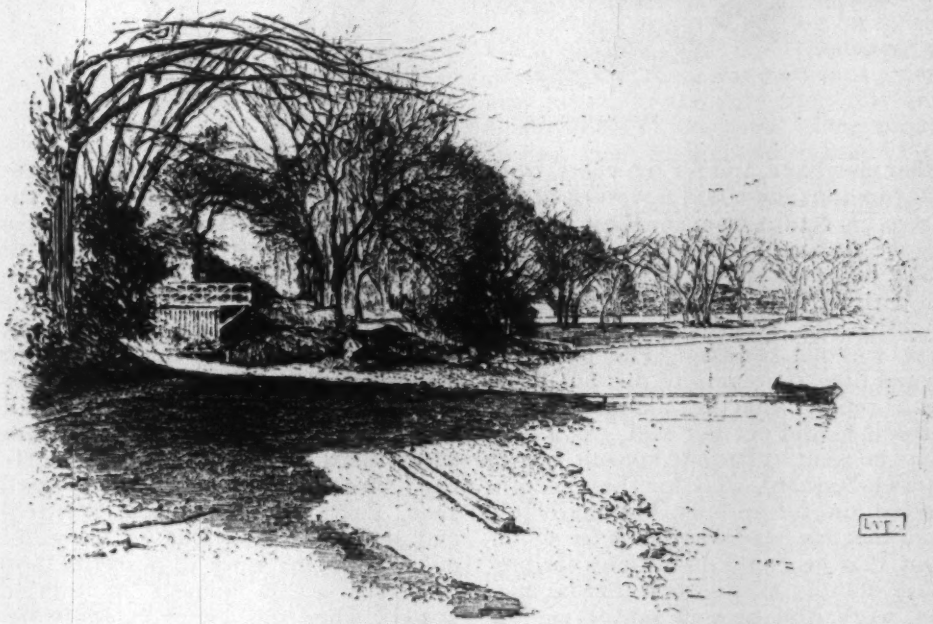
PARKMAN'S HOUSE AT JAMAICA PLAIN.

tion that ruled his life. The present interest in American history had not then been awakened, and nobody yet cared for the story of the French colonization of America. While the materials for the writing of this history were abundant, and it was full of romantic interest, they were chiefly in the French language, and could only be brought together at great cost and by indefatigable toil. Had this Harvard graduate counted the cost of his undertaking? Would it not be a mistake to enter a field that it would take a lifetime to cover? It was a venture that had great risks, but young Parkman was so wrapped up in it that he could do nothing else. It was his passion; and when his career is looked at in its whole extent, it was a work to which all the energies of his life were directed. He had to take counsel chiefly with himself, and he decided to do the one thing that he wanted to do the most; but with a measure of his powers in which there was no undue self-confidence, he determined that nothing on his part should be lacking to insure success.

For two years after graduation he was a student in the law school at Cambridge, but his chief work at this time was to read European history for the period covered by the discovery and settlement of North America, so that he might approach his subject with a grasp of its roots in civilization. There were two points to be considered. He had taken up one, but the Indians were the other. The story he had to tell was the contact of Europeans with savages in the American wilderness, and nothing could be done effectively unless he knew the Indians in their natural state and could see life from their point of view. This led him to spend the summer of 1846, in company with his kinsman, Quincy A. Shaw, among the aborigines in the West, who were the direct representatives of the great tribes that two or three centuries ago contested the advance of the Europeans in North America. The kind of work that he aimed to do must be based upon accurate information both of the events to be described and of the life of the people who took part in them. Cooper drew his pictures of savage life from an intimacy with the Indians of the frontier, and Walter Scott wrote his novels out of a familiarity with Scottish life as comprehensive as it was exact. Parkman, if he were to make the past live again, must enter into it as if he had been an eye-witness of what happened. This was what led him to enter the wilderness and live with the Indians.

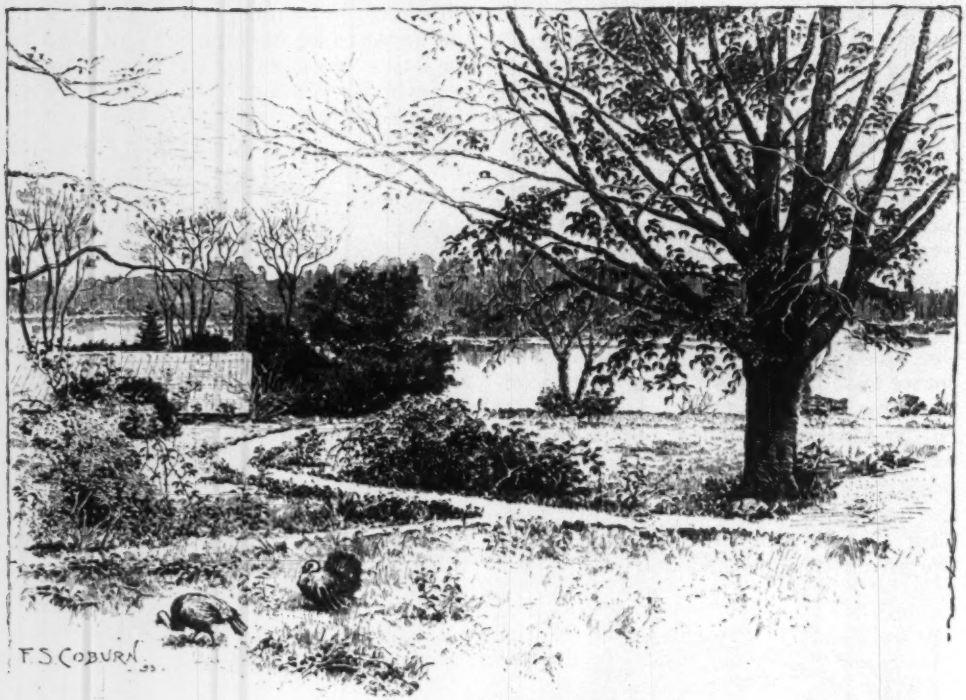
The story of his experiences is told in "The Oregon Trail." This was his first book, dictated and dedicated to his "comrade of a summer and friend of a life-time," but such a living account of his adventures that it is to-day our best description of the North American Indians. To Parkman it was the finding of the key to his story, to bury himself among these savages. All his early life had been a preparation for this trip. To live, to think, to act like a savage was to be able to see the contests between native and European in the white light of fact; and when he came to write "The Conspiracy of Pontiac," in which he aimed "to portray the American forest and the American Indian at the

period when both received their final doom," the benefit of this summer's outing with the Indians was apparent. On nearly every page of that work are the traces of his intimate knowledge of Indian life and character. The savage lives again in his haunts; the forest echoes to his war-whoop; the story is picturesque; the touches of nature are rivalled by the touches of life. In this work he has caught the secrets of Indian warfare; the pages glow in the light of his imagination; and yet it is the Indian as a man and in his best estate that he brings before us. Pontiac, the hero, was the great Indian of North America, and the part which he had in the efforts to band the savages together, to drive the white men from the continent, was worthy of the champion of a ruined race. For Parkman the primeval American had an undying interest, and the savage Indians were far more interesting than the civilized ones.



JAMAICA POND, AT THE FOOT OF MR. PARKMAN'S GARDEN.

Valuable as this summer's experience among the Dacotahs was, and he never regretted it, it cost him his health for life. Up to this time he had been a vigorous, athletic person, able to do whatever he willed. But while with the savages he became very ill, and as the tribe were either hunting or fighting all the summer, and constantly on the go, it was impossible for him to get well. The rough Indian fare, and the constant movement from place to place, aggravated his disorder. To confess illness was to be tomahawked. To conceal it and bear up bravely was to command their respect and confidence. Parkman was so ill that he had to be lifted into his saddle, and he rode many a day when it was with difficulty that he held on to the pommel. It was simply his unconquerable will that lifted him out of this illness; but, when he returned to civilization, the strain he had been under left him permanently disabled. He could not use his eyes for about three years, and it seemed as if all hope of carrying out the plans of his life must be given up. He had inherited a nervous affection which this illness had aggravated, and from this time onward he had a continuous trouble with his head and eyes that could be humored, but not relieved. He could command for work not more than one twentieth of the time which



THE GARDEN OF THE JAMAICA PLAIN HOUSE.

other men have, and for ten years, from 1853 to 1863, he could not work at all. From his return from the West in 1846, to the day of his death, November 8, 1893, he never knew a day when he was an entirely well man. He spent some months at a water-cure in Northampton, without benefit. The physician urged him to prepare to die, but Parkman replied that he should not die, even if he did not get well. At a later date he went to Paris to consult Doctor Brown-Sequard, who for three months tested him for insanity, but finally told him that his head was perfectly sound, and that he could do nothing for him. The doctors all told him that he must not work, and he once said to me that if he had followed their instructions, he could never have written his books. The situation was desperate. For a great part of the time he could not read continuously for more than five minutes without straining his eyes, and it was impossible for him to write or read for long periods.

How could one under these conditions become an author? The twelve volumes of his completed works represent the history of the French occupation of North America, and are a monument of industry and effort which places him at the head of American historians; but how could they be written? Parkman himself shrank from telling the story until his work was done. There is no record of literary achievement pursued through half a century under similar restrictions and with such resolute purpose. He had barely turned his twenty-third year, energetic, impetuous, spirited, and sensitive, ambitious to leave his name in worthy work to posterity, and conscious within himself of unused powers, when this awful calamity befell him. He met it. It changed the whole order of his life. By nature to will and to do had been with him a simultaneous act; henceforth to will was one thing, and to do was another; and yet what he had proposed to himself was an undertaking that demanded the best powers of a well and strong man. It was here that he rose in spirit to the occasion. "He that

ruleth himself is greater than he that taketh a city." Parkman at once took in the bearings of his case. If he could subdue his temper and work under the severest conditions, he could write his history ; but when he began it, it was at such a pace that he said it would take a hundred and fifty years to complete it. It was working at a snail's progress when his impulse was to go like lightning. He had to a high degree the gifts of quick perception, accurate touch, and rapid intellectual movement, and this is disclosed in the

A TROPHY OF THE OREGON TRAIL DAYS, IN THE JAMAICA PLAIN HOUSE.

graphic pages of "The Oregon Trail." How he could have told that story in all its minuteness of detail from memory it is difficult to understand ; but he put everything into it, and it shows the rare capacity for vivid writing which was to be displayed on a higher plane in his subsequent books. From the beginning of "The Conspiracy of Pontiac" to the end of "A Half Century of Conflict," which was his last work, the style is that of a master, clear, picturesque, concise, exact, discriminating, and effective. It is the work of one who never came short of his best. Dr. George E. Ellis says that Parkman once asked him, in the intimacy of their friendship, whether there was any falling off in temper and tone in his later works. With a superb confidence in himself when he *could* work, there was a modest distrust of the result.

The sanity of Parkman was displayed in the way he met his conditions. He remade himself. He brought his will into subjection to an enfeebled body, and determined to put every bit of strength that was left to him into the work he wished to do. I have never met a man with the same superb gifts of mind and soul, who had brought himself into the same submission to his destiny, and who controlled himself with the same cheerful resignation to duty. To see him in his old age, in the quietness of his home, and in his hours of rest, was a privilege and a joy. His serenity was that of one who had learned to live by ruling his spirit. His calmness was the calmness of strength, and there was a sense of greatness raised by the very simplicity and cheerfulness of the man. One might, at first view, be inclined to ask, "Can this quiet, unobtrusive man be the author of 'Montcalm and Wolfe,' and can he have first told the story of 'The Pioneers of France in the New World'?" But let a question waken the lion within him, and the conversation was immediately as vigorous and powerful as his books, and one saw where his strength lay. His natural resources were great, and when he was able to work, not a moment was wasted. The collection of his materials cost him a large part of his fortune, and he once told me that the income from his books would not much more than repay this merely preparatory outlay. He was obliged to make several trips to England and France in the search for material, and he had to employ costly experts to assist him in hunting up and copying what he wanted. Then his trips to Canada, to examine every locality that came into his story, and to verify every statement made, were something formidable. This gave reality to his pictures ; and every part of his work was written with the same care for definite state-

Chapter XXVII

(348)

1687, 1688.

The Innocent and the Guilty

Triumph of the Murderers;— Joutel among the Cenis;— White Savages;— Insolence of Duhaut and his Accomplices;— Murder of Duhaut and Liotot;— Hiens the Buccaneer;— Joutel and his Party;— Their Escape;— They reach the Arkansas;— Bravery and Devotion of Tonty;— The Fugitives reach the Illinois;— Unworthy Conduct of Cavelier;— Joe and his Companions ~~sent for~~ ~~sent for~~ ~~France~~ return to France.

Father Anastase Douay returned to the camp, and aghast with grief and terror, rushed into the hut of Cavelier. "My poor brother is dead!" cried the priest, instantly divining the catastrophe from the horror-stricken face of the messenger. Close behind came the murderers. Duhaut at their head. Cavelier, his young

nephew, and Doucy himself all fell on their knees expecting instant death. The priest begged piteously for half an hour to prepare for his end; but their terror and submission softened and their lives were spared. The camp submitted without resistance & Durhant was lord of all.

Joutel, at the moment, chanced to be absent, and l'Archevêque, who had a kindness for him, went quietly to seek him. He found him on a hillock, looking at the band of horses grazing on the meadow below. "I was petrified", he says, "at the news, and knew not whether to fly or remain where I was; but at length, as I

FACSIMILE OF A PAGE OF MR. PARKMAN'S MANUSCRIPT, FROM "THE DISCOVERY OF THE GREAT WEST," PART THIRD OF "FRANCE AND ENGLAND IN NORTH AMERICA."

NOTE.—A special interest attaches to this manuscript, since it is the last written by Francis Parkman's own hand. After this third volume of his history, he dictated to an amanuensis from rough notes.

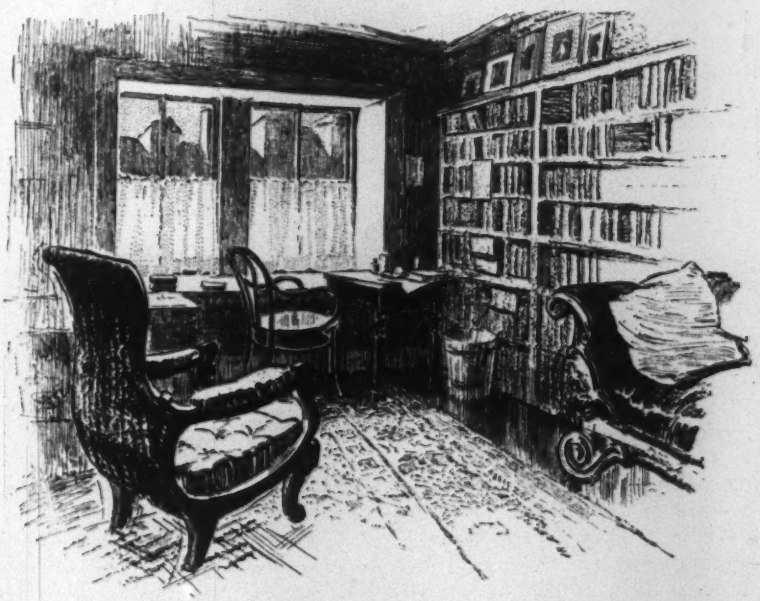
ment. It would seem as if his conscientiousness and fidelity increased with the difficulties that beset him.

How, under such unfriendly conditions, was such rare work done? First in the home of his kinsman on Staten Island, and then in the old Parkman mansion on Bowdoin Square, with the aid of an assistant to read the documents to him, the sifting of materials for "The Conspiracy of Pontiac" was begun. All the manuscript documents for one book were read slowly to him, and gone over from beginning to end. He had the manuscripts read to him first for the leading points, and then he went over them again for the details of the story. At these readings he made, first, essential notes, and then non-essential. The further notes were references to essential passages in the different volumes, and when he was ready to dictate he held these notes in hand, and carefully studied the subject until he felt the imagination quickening as if he were one of the actors in the story. The narrative became as real as life. He held the materials in his grasp until they caught fire from himself. It was a slow, laborious process by which the story grew, but the concentration of the pent-up forces upon the work was such that it became a part of his life. As he used to say, the Indian wars ran in his head, and in sleepless hours the work was like food to his strong and clear mind. Parkman could never explain his method. He had immense bodies of material to deal with, and he wrought them into clear and consecutive stories, and then dictated them as an artist paints a picture, putting in color and character wherever they were required. Very little was done without suffering, but beyond hints in his prefaces, the story of the way in which these narratives were prepared is not told. The truth is, that for nearly fifty years he toiled day after day amid limitations so severe that work seemed almost impossible, waiting for moments of health as his greatest blessing, glad to do a little, and always thankful when he could do more. He could not go into society, because it consumed his strength. He could see but few friends in his own house, for the same reason. His own family had to shield him from excitements. It was like fighting with destiny to do anything, and yet month by month the noiseless fabric grew, and book after book was published, until his plan was completed.

MISS PARKMAN'S HOUSE IN CHESTNUT STREET. (THE FIRST HOUSE IN THE PICTURE.)

To realize his personality is difficult.

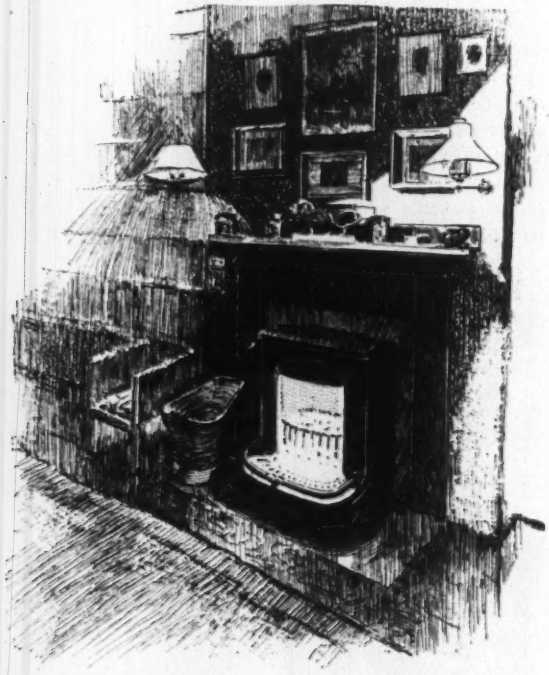
Through all his riper life he was compelled to repress himself, and to save his strength for his work. He was a fellow of Harvard from 1875 to 1888, the first president of St. Botolph's Club, a welcome visitor at other clubs, and had a taste for public affairs. But if he would do the work he had attempted, he must live a quiet and secluded life. Society was an inspiration to him, but he was too loyal to his work to give up for pleasure what was meant for mankind. He was one of the least known men of letters in the country, and when, in later years, his eminence as an author was everywhere acknowledged, he was compelled to enjoy his fame as a private satisfaction. Outside of the history, his personality had little scope beyond his own home, and even there it was under control. He was not a literary man in his spirit or bearing. He was never able to go outside of his work. Aside from a novel, "Vassall Morton," which was not a success, and a few periodical essays, he did nothing; and his personality is chiefly connected with the heroic conquest of himself and with the sanctities of private life.



FRANCIS PARKMAN'S STUDY IN THE CHESTNUT STREET HOUSE.

Every section of "France and England in North America" was written independent of the rest, though fitted into the story, and essential to its continuity. The "Jesuits in North America," like "The Conspiracy of Pontiac," brought him much into contact with the Indians, but in a different way. The Jesuits were the heralds of the Cross, and Pontiac was the native leader to drive out the Europeans; but in this work he went to the roots of civilization in Canada, and presented these missionaries for the first time to the world in a proper light. In an earlier work, "The Pioneers of France in the New World," he told the story of the French settlement in Florida, and of Champlain and of his associates in the North. The next volume in the series bears the title of "La Salle and the Discovery of the Great West." It related the discovery of the Mississippi and the Great Lakes, and almost the whole of the material was drawn from the various public archives of France. The next volume in the series was "Count Frontenac and New France under Louis XIV." "The Old Régime in Canada" is a work in which he delineated with surprising detail the effort to transfer from France to

Canada the institutions of feudalism, and to build up a French monarchy in the New World. In this volume, as in the one on "Count Frontenac and New France under Louis XIV.," he gave the inside history of the French régime in North America. It is a work whose accuracy has been questioned; but when the author declared himself ready to support his statements with proofs, no one disputed him. The volumes which had been first in his intention to write were, in the actual writing, next to the last in the series, "Montcalm and Wolfe." They brought the controversy between the English and the French to an end, in the defeat of Montcalm by Wolfe on the Heights of Abraham; and they were followed by "A Half Century of Conflict," in which the skirmishing between the two nations for fifty years was presented with a fulness of detail that exhausted the subject. When he wrote his final preface, in the spring of 1892, he could say with truth that the task of his life had been completed. It was one of the happiest moments in his career when the whole undertaking was finished. Gibbon has described his joy when his "Decline and Fall of the Roman Empire" was ended. Parkman has left no record of the joyous moments when his work was done, but it was noted that he took life easier from that time, and that the strain was over. Even then he began to revise the earlier volumes, for which additional material had been obtained, and these revisions were going on when he died.



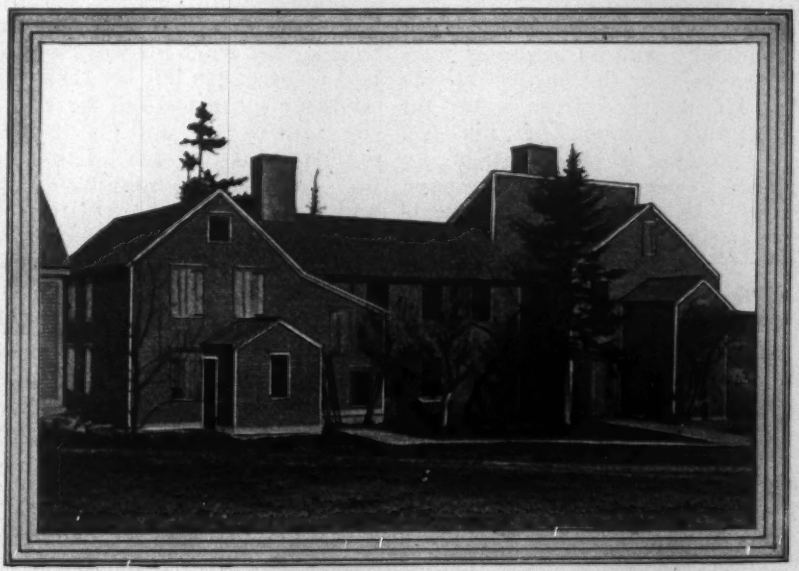
MANTELPIECE IN CHESTNUT STREET STUDY.

The nature of his work was such as to give him a great reputation abroad. His books took the rank of authorities, and in Canada he was honored in the highest degree. In truth, he had written the history of Canada down to the middle of the last century. The English people gave his works a place among the great histories of our time. He was, first of all, an accurate and trustworthy writer. He left nothing unproved or slipshod, and his paintings of natural scenery are the only

parts where he could not support his statements by book and line. It was the justice and impartiality of his treatment of delicate points that gave him a constantly increasing reputation, and his works stand to-day as permanent histories of "France and England in North America." They are not only accurate, but final. He exhausted the material that could be used, and if any one should dispute his authority, an oaken cabinet, containing his manuscript volumes, and presented by him to the Massachusetts Historical Society, holds the documents which he followed, and will always enable a critic to estimate the correctness of his writing. The highest quality of his work was the historical imagination which he threw into it. This illuminates every page, and gives the quickening vitality that fascinates the reader. His art is so put out of sight by this realizing faculty that the narratives read like a romance.

Parkman never lost the mastery of his subject. He told his story so that it bore its own testimony, and he presented a philosophy of history without formulating it. He began his work when the scientific method was unknown; but he adopted that method unconsciously from the first, and his narratives, like Homer's "Iliad," are in the form and spirit of permanent literature. Whatever changes may come, the history of "France and England in North America" must always retain its place as a work of the highest authority and value. It is impossible for any other to supersede it. It is truthful, impartial, and conclûsive. Parkman wrought into it his integrity, his truthfulness, his sense of honor, the best that was in him, and it is the noblest monument of intellectual effort in American literature.

The severity with which he was obliged to treat himself must not be interpreted as an unwillingness to take his share of the burden of life. No man of his generation had a keener relish for every interest, public and private, that was worth while. He was married in 1852 to a daughter of the famous Dr. Jacob Bigelow, and until his wife's death, in 1858, had a happy home of his own. Then he lived with his sister for the rest of his life. They had two homes. One was at 50 Chestnut Street, in Boston, where his workroom was in the attic story with his library. The other was a summer home, which he purchased in 1854, on



THE OLD GOVERNOR WENTWORTH HOUSE AT PORTSMOUTH, N. H., THE HOME OF PARKMAN'S DAUGHTER, WHERE HE SPENT THE SUMMER IN HIS LAST YEARS.

the southwestern bank of Jamaica Pond, long since a part of "greater Boston." When his physical difficulties threatened to withhold him from every kind of intellectual labor, he began the culture of flowers, and became one of the most successful horticulturists of the day, and, in recognition of his skill as such, was chosen president of the Horticultural Society of Boston. He produced new forms of the lily, and brought to special perfection the culture of roses. This was taken up as a recreation when he could do nothing else, and he said that it had saved his life. It gave him something to do, and kept his mind from preying on itself. His love of nature was genuine, and, whether in the forest or in the garden, he took her to his heart. The fame of his garden has extended only less widely than that of his writings.

His greatest difficulty was to gain sleep. The sensitiveness of his brain to excitement was excessive, and he never worked except in the morning. The afternoon was given to exercise, and in the evening he quietly rested, and hoped for a good night's sleep. The least excitement induced wakefulness, and it was rarely the case that he could sleep enough to restore his strength. He delighted in rowing and in walking. When he could bear it, he rode horseback; and as a young man he always asked for the hardest horses to ride. He suffered from water on the knee, and because of this and frequent attacks of rheumatism he was obliged to use crutches or a cane in walking. In religious belief, treating reverently always the faiths of others, he felt for himself that the unknown was greater than the known in the deeper things of life.

In person he was of medium height, and in his later years he inclined to fulness of habit. He had the shoulders and arms of an athlete, and his ruddy face and twinkling eyes gave the assurance of robust health. His features were delicate; his face was always clean-shaven; and in conversation his features were lighted up by an expression just breaking into a smile, that lent a special interest to what he said. His eyes were restless and full of fire. His head was large and well set upon his shoulders, and there was in his bearing a dignity and refinement which gave special distinction to the man. His presence brought what was best with it, and his spirit was that of one who could do immensely more than he allowed himself to. He spoke of his life as one of "repressed activity;" and his bearing was that of a man who held himself in check. He was always modest and reticent about himself, and the prefaces to his different volumes were almost the limit which he allowed himself in speaking even to intimate friends about his work. He hated falsehood and shams, and could denounce them in the plainest of English. Had his health allowed him to go to any extent beyond his historical work, he would gladly have become a publicist, and engaged in the discussion of public questions on which he had something to say; but when his work was done, he had no strength left for tasks like this. At three score-and-ten he had earned the right to rest, and his health was so delicate that this was all that he could do. His life was unique in its purpose and results. It was entirely devoted to the realization of a single great conception, and every available moment of good time was put into that. His work was great, but his life was greater.

THE EDGE OF THE FUTURE.

NO men are so fit to make a report on the various problems of modern civilization as those who are in the forefront of its active service. The statements of such men have the primary verity of personal contact. More than ordinary weight and significance attach to the statements of anticipation and conviction prompted by the opening of a new year, and printed below. They are the beliefs of men who are themselves masterful workers in the very matter of which they speak. A fit motto for the whole would be those three words adopted from Emerson by Professor Tyndall: "I covet truth!"

For a few of these forecasts—those of Pope Leo, Reclus, Turpin, Père Hyacinthe, Dumas, D'Hulst, Daudet, Simon, Verlaine, Zola, Bismarck, and Pasteur—credit is due to the *Almanach Hachette*. The others are contributed directly to McClure's Magazine.

THE EDGE OF THE FUTURE IN SCIENCE.

PROFESSOR EDWIN J. HOUSTON, OF THE THOMSON-HOUSTON COMPANY, ON THE FUTURE OF ELECTRICITY.

The edge of the electric future is bright with immediate promise for the world's weal.

The Electric Motor to Displace the Steam Engine.

In the nearer foreground I see a practical method for the production of electricity directly from the burning of coal. This achieved, there necessarily follows the universal adoption of the electric motor as a prime mover; the relegation of the steam-engine to the scrap-heap; and the almost immediate realization of the air-ship as a means of transportation.

Life to be Prolonged by the Mastery of Electricity.

Assuming the cause of chemical affinity to lie in the unlike electric charges of the combining atoms, I see the practical realization of electric synthesis, whereby wholesome food products will be directly formed under the potency of electric affinities. I see, too, a marked advance in electro-therapeutics, whereby human life will be prolonged and its sufferings alleviated. Diagnosis and prognosis will be profoundly aided by exact electrical measurements of the various organs of the human body as regards their electro-motive force and resistance. The electro-therapist of the future will employ electric charges and currents for restoring the normal charges and currents of the body, as well as for the stimulation of nervous or muscular tissues.

Seeing a Thousand Miles.

Back of these achievements I discern a practical apparatus for seeing through a wire; i.e., a device for looking into a receiver at one end of a metallic wire and seeing therein a faithful reproduction of whatever optical images are impressed on a transmitter at the other end, even though thousands of miles intervene. I see the possible use of the step-down transformer for the preparation of a roadbed or road surface by the vitrification, *in situ*, of clay or other suitable soil, by the intense heating power of enormous currents of electricity.

Unwritten, Unspoken Thought Registered.

These things I believe I see with fair distinctness. In the farther background I faintly see, dimly outlined through the clouds, an apparatus for the automatic registration of unwritten, unspoken thought, and its accurate reproduction at any indefinite time afterwards.

EDWIN J. HOUSTON.

EDWARD ATKINSON, THE DISTINGUISHED ECONOMIST, FORECASTS AN ECONOMIC MILLENNIUM.

Wars and Hunger to Cease.

In the twentieth century the private soldiers in the armies of Europe will have learned what fools men are to fight. When that time comes, hunger, now promoted by the waste of preparation for war, will have ceased. The barriers of hostile tariffs now separating European countries will have been thrown down. Men will have become free to serve each other in the supply of all their wants. The military caste will have ceased to be honored. The well-trained officers of the armies will have been promoted from their present worse than useless positions to become captains of industry. They will then hold positions of power and influence, carrying peace, good-will, and plenty among all the nations of the earth. Dynasties will have been deposed. Rulers who now claim to rule by birth or privilege, and who have attempted to resist the will of the private soldiers drawn from the ranks of the people, will have been overcome by force if necessary. Men when ordered to turn their bayonets against each other will have turned them on those by whom the orders were given. Government of the people, by the people, and for the people, will have been established in Europe as firmly as it now is in the United States.

Science will win from the Earth her Abundance.

Science will have gained control over the nitrogen of the atmosphere. The soil, no longer worked as a mine but as a laboratory, will then supply the abundance of food, fuel, fibre, and fabric necessary to comfortable subsistence in measureless abundance. The man who possesses average intelligence coupled with industry, and who is governed by a personal religion based on reason and not on superstition, will be so sure of material welfare that it will not pay to be rich.

An Economic Millennium.

This is the forecast of the economic millennium which is revealed to the economist who, dealing with statistics, comprehends what is written amid the columns of figures, which none can see there except he who possesses imagination. The prime factor in dealing with economic problems, with great business enterprises and especially with statistics, is the imagination. Figures never lie except when liars make the figures. These are the truths they tell.

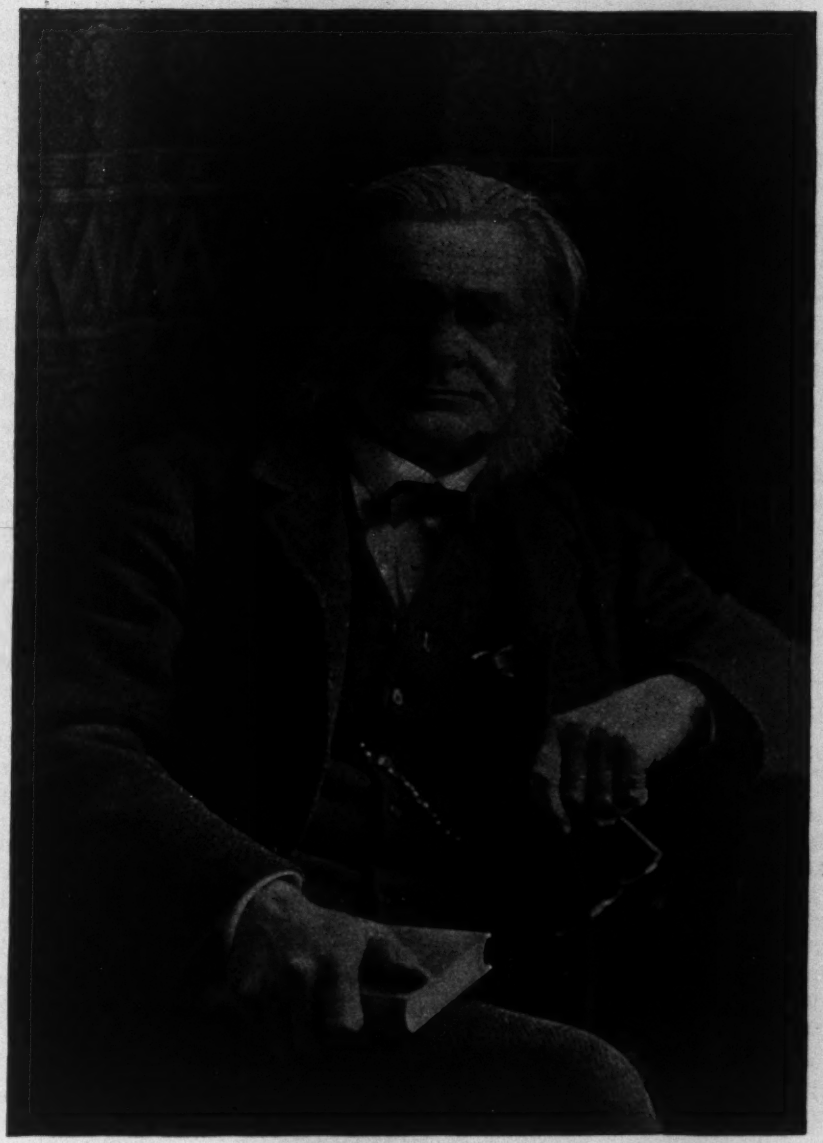
EDWARD ATKINSON.

BROOKLINE, MASSACHUSETTS, *December*, 1893.

THE FUTURE OF INDUSTRIAL MECHANISM.—PROFESSOR ROBERT H. THURSTON, HEAD OF THE MECHANICAL ENGINEERING DEPARTMENT OF CORNELL UNIVERSITY.

One Man's Labor To-day more than Ten Men's a Century ago.

The arts and the sciences, like nature, never turn sharp corners, and the direction of progress, at the moment and in the immediate past, may almost certainly be taken as that of progress in the early future. The improvements seen in the generation just closing, in all the arts and the industries, as well as in the onward advance of science and in its applications, have followed, in most instances, a definite and easily-traced line. The results are seen in the tremendous changes effected in all the social and economical conditions of life among all civilized peoples. One man's labor is to-day more effective than was that of ten men a century ago, before the introduction of the steam-engine and of labor-saving machinery commenced this marvellous revolution. The work of one day has come to represent nearly double, in fruitfulness and in the production of the necessities, the comforts, the luxuries, to which we are becoming accustomed, as compared with that of the middle of the century. The progression has been an acceleration, and there is no indication that this steadily increasing movement has reached its culminating point. The next generation will, undoubtedly, see as



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PROFESSOR HUXLEY.

astonishing changes, and as wonderful gains in all that makes life easier and better worth living, as has that now closing.

Four Days to Europe and Ten Hours to Chicago from New York.

The steamship of to-day crosses the Atlantic in a little more than five days, one half the time taken in 1850. This has been accomplished by the concentration of power, by raising the pressure of steam, by driving the engines at higher speeds, and by gradual reduction of the wastes of heat and steam and fuel, in such manner as to enable the steam-boiler to supply twice as much power within a given compass, and with half the fuel formerly required. This progress is still observable. Should it prove possible, in the early days of the twentieth century, to cross the ocean in less than four days, it will be no more wonderful

than would have seemed the possibility of driving steamships of ten thousand tons or more over the same path in a week to our fathers. The locomotive of to-day, through the same sort of evolution and concentration of power, hauls its fast trains from New York to Chicago in twenty hours, or across the continent in four days. Similar gradual and steady gains, reducing the schedule time to one-half these figures, will not surprise the people of the coming generation as much as has the advance made since 1830 astonished our contemporaries.

The Tyranny of Trusts to be Broken by Electricity.

The telegraph ties together the continents, and puts a girdle around the earth, as the outcome of the invention and engineering skill of fifty years. Who shall say that the telephone may not, in a few years, give us the power to speak with friends in the Orient, or on the continent of the antipodes? The electric current, as the flexible and far-reaching arm of the steam-giant, now applies the power of our coal-beds to do work miles from its point of liberation from its ages of rest. With continued application of the genius of the inventor and of the engineer, it may yet transmit energy, dormant since the carboniferous era, from the coal-beds of Pennsylvania or of Illinois, in form of light, of heat, of mechanical power, to every hamlet, to do the work of factory, mill, of household, even, and to restore independence to the workingman by giving him the forces needed for his work in his own home. When domesticated thus, the tyranny of corporations and of trusts will be broken, as far as it enslaves the worker; and such combinations will be then only beneficial, through reduction of costs of production in limited fields. Inventions of new forms of mechanism in every department of industry will unquestionably continue to make the labor of the individual easier, life more comfortable, hours of labor shorter, necessities easily obtained; comforts and luxuries now only known to the rich, the usual and certain privilege of all.

Easier Lives in Store for All.

With reduced hours of struggle for life and needs, time will be afforded every good citizen for rest, for enjoyment, for thought; and all classes may then become classes of leisure in ample degree for their own best welfare. Easy lives will come to mean comfortable and happy lives. The world will grow better as it grows older, after the struggle for survival shall have ceased; and the length of the life of the individual will be prolonged, while the growth of population, now limited only by the suffering consequent upon overcrowding the present field, will be given its natural and comfortable expansion to a limit set by the extent to which vital powers are expended in mental and intellectual exertion. The family of the nation will, like the family of the individual, be smaller and happier as the mind, instead of the body, comes to utilize all physical powers.

ROBERT H. THURSTON.

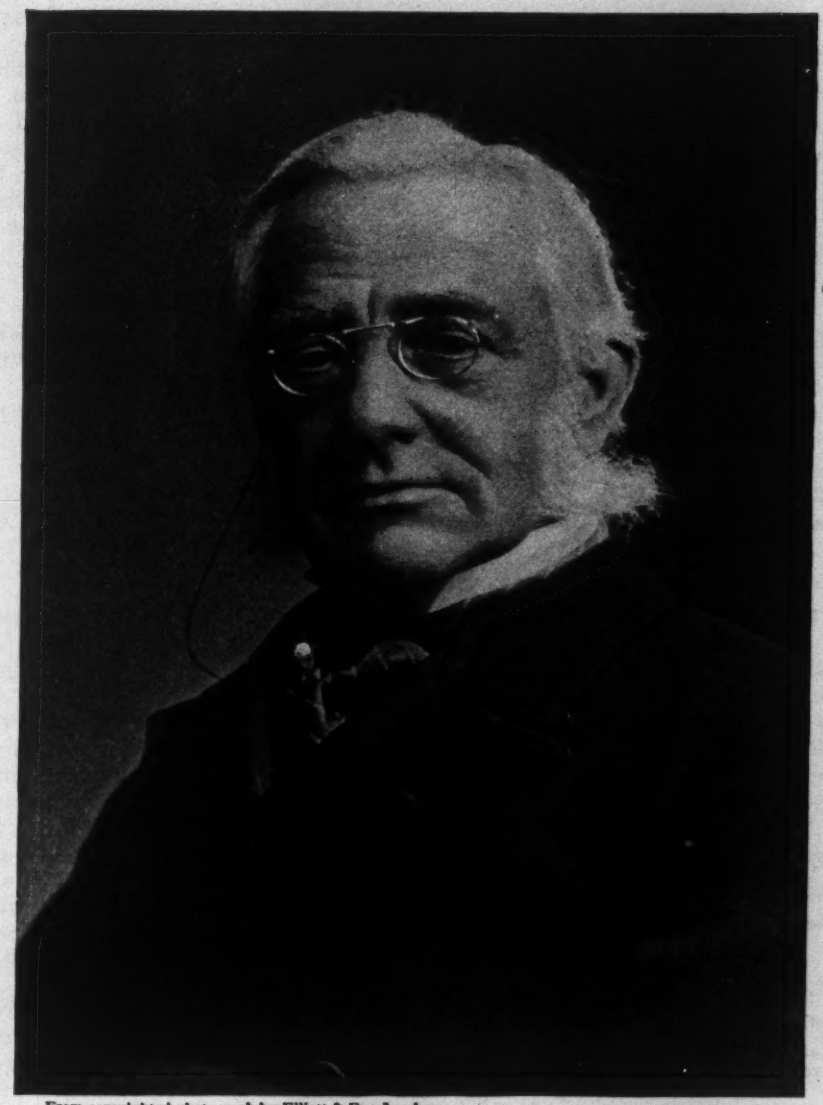
DR. HERBERT NICHOLS, OF THE HARVARD LABORATORY OF PSYCHOLOGY, ON THE PROMISE IN MENTAL SCIENCE.

The Mental Laws to be Determined Exactly.

The new science of psychology will determine the mental laws exactly: the laws of the individual and of society; the laws of æsthetics, of education, of ethics, and of every human faculty.

Psychology to Secure us Wealth and Art, Wisdom and Happiness.

It will compel men to live by these laws, because it will make them plain to all men—as plain as the law of gravity. The world will then go forward, because it will see how. We shall then have a higher manhood, because its type will be clear to us. We shall have a new art and a new literature, because we shall know the secrets of beauty. Its standards shall be broader in proportion as they shall be truer. We may then efficiently love our unfortunate brother by knowing how to make him lovable, and how to make life lovable to him. Psychology will secure to man wealth and art, wisdom and happiness, by making



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PROFESSOR MAX MÜLLER.

man capable of them. Psychology will make education the chief function of government, by giving education a scope heretofore unconceived of.

The science of the past opened nature to man. The new science will open man to nature.

HERBERT NICHOLS.

THE FUTURE IN CHEMISTRY.—PROFESSOR IRA REMSEN OF JOHNS HOPKINS UNIVERSITY.

Matter to be Brought to a Finer Analysis in its Nature and Laws.

The indications of the present seem to me to point to two conclusions bearing upon the fundamental problems of chemistry: (1) That the different forms of matter are in some way closely related, and that the number of elementary forms will be much reduced by investigation. (2) That it will be possible in the future to

develop a mechanics of molecules comparable to the mechanics of the heavenly bodies.

Artificial Preparation of Food and Improved Methods of Treating Disease in Prospect.

As regards the applications of chemistry, two probabilities also appear: (1) That the time is not far distant when the artificial preparation of articles of food will be accomplished. (2) That the chemical study of the substances present in the animal body under normal conditions, and of those formed in the body in disease, with lead to chemical methods of treating disease that will be thoroughly scientific.

IRA REMSEN.

PASTEUR PREDICTS THE ERADICATION OF CONTAGIOUS SCOURGES.

Thanks to some simple measures dictated by experimental science, we can allow ourselves to foresee the time when all the great contagious scourges which have decimated humanity shall be eradicated at their sources.

PASTEUR.

THE OUTLOOK FOR CHRISTIANITY.

DOCTOR JOHN HALL, OF THE FIFTH AVENUE PRESBYTERIAN CHURCH, NEW YORK.

Some Present Ground for Anxiety, but the Final Result Sure.

On the side of life which it is my duty to watch, I see some reasons for anxiety; but I have no fears as to the result. For instance, there is a tendency to decry the historic evangelical theology and to eulogize "broadness." I am concerned about the individuals who will suffer on this line, but I have no fear. The evangelical churches will advance, come nearer together in spirit and purpose, and grow in power. Politicians, in some parts of the world, are unstable as to Protestantism. I am concerned about some who will, under this influence, suffer; but the truths identified with the Reformation will triumph in the end, even on the field of political life. Capitalists and large employers have some lessons to learn, and, until they are learnt, "labor," so-called, will make trouble; but they *will* be learnt, and Christianity is one of the greatest teaching powers.

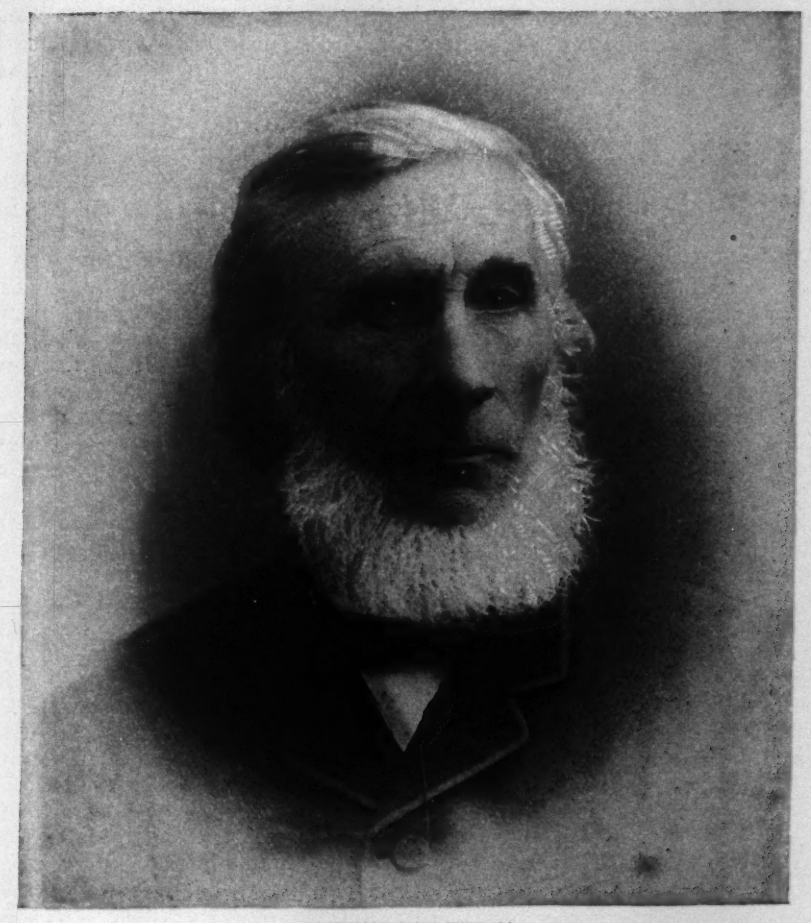
The Old Convictions Relaxing for the Present Only.

From the influences above referred to, our nation is relaxing, in some places, its hold of the convictions that made this nation what it is; but the evils thus being developed will be realized at length; reaction will set in, and our people will come to feel that if God's blessing is to be retained, God's commands must be obeyed.

None of the So-called "New Systems" can Endure.

There are here and there so-called "new religious systems" being developed, and even organizations formed, in view of which some are despondent as to the future of our evangelical faith. Spiritualism, "Christian Science," and the like, are specimens. I have no fear about the issue, although troubled over those who are fascinated by these plausible substitutes for the religion of the Bible. Time was when atheism and infidelity stood boldly in front of advancing truth, and tried to throw it back. The prince of this world is cunning enough to know that such a policy is now practically useless. He does not assail religion as in other days, but tries to get worthless substitutes for it. The train could not be met and stopped, but ingenuity may put down some new rails and get it off the track. But these revivals of old human speculations will have their day, and disappear. This will be not from the inherent energy of the Church, but from the power of God the Holy Spirit working through the truth; and it is not a hope built on the zeal, fidelity, and consecration of our denominations, for we are far from being up to the standard fixed by the Church's Head, and are too much inclined to formalism and the teachings of worldly wisdom; but it is based on the infallible truth that "the Lord reigneth."

JOHN HALL.



PROFESSOR JOHN TYNDALL.

PROFESSOR CHARLES A. BRIGGS, OF UNION THEOLOGICAL SEMINARY, FORESEES A GREAT CONSOLIDATION OF CHURCHES.

The future of Christianity is clouded, but lighted up by a few bright streaks. There are irresistible tendencies in the direction of Church Unity. The several hundred denominations will be swallowed up by a few institutional Churches which have established historic rights. These Churches will more and more extend their arms with maternal love, and welcome home the children they have driven forth in the olden times. The children will return gladly to their mothers so soon as the essential barriers have been removed. The mother Churches will shake off their conservatism, and appropriate all that is wholesome and practical from the experience of their children. A reunited Christendom will become more evangelistic, more efficient, and more Christlike. The great questions of the future are ethical and social questions. Great minds will concentrate their attention upon the evils which afflict society, and invent their cures. Great hearts will pour forth the sacrifice of their love in the redemption of the fallen and the lost. Gigantic efforts will be put forth by the vast Christian organizations of the next century for the reformation of mankind. Woman

The Great Questions of the Future Ethical and Social.

will take a higher and more glorious part in the work of the Church in the future, and that will revise it, reconstruct it, and reform it in all its parts.

C. A. BRIGGS.

JOHN IRELAND, ARCHBISHOP OF ST. PAUL.

There will be more Mercy, Justice, and Righteousness in the World.

I trust in Providence and in humanity, and I have confidence that the moral and social forces which now so profoundly agitate the world will work into an increase of goodness and happiness among men. Much will depend upon the intelligence and zeal of those whom position and talent have made the leaders of thought and action. Seldom in history did such deep responsibilities lie upon the leaders of their fellows as there do to-day. Scarcely ever was humanity pregnant with such momentous possibilities; scarcely ever were similar opportunities offered to accomplish great things. The future will bring no millennium. There will be no rosebush without thorns, no day without the nearness of evening shades, no life without the menace of death. There will be inequalities among men, and passions will disturb the peace of souls. But I do believe there will be more mercy in the world, more justice, more righteousness. There will be more respect for manhood, more liberty for the individual. The brotherhood of men will be more widely recognized, and its lessons more faithfully practised. Servitude and oppression will be banished even from the darkest thickets of African forests. The boon of civilization will reach all races of the human family; civil and political liberty will speed across all seas and oceans. Nations will see in one another assemblies of brothers, and peaceful arbitration will, in settlement of disagreements, take the place of the murderous sword. Brute force will more and more yield before reason; mind will more and more assert itself over matter and over passion. All this will not come to pass without delays and backward movements, without reactions and repressions, but the victory will be for truth and justice.

Unbelief but a Passing Wave.

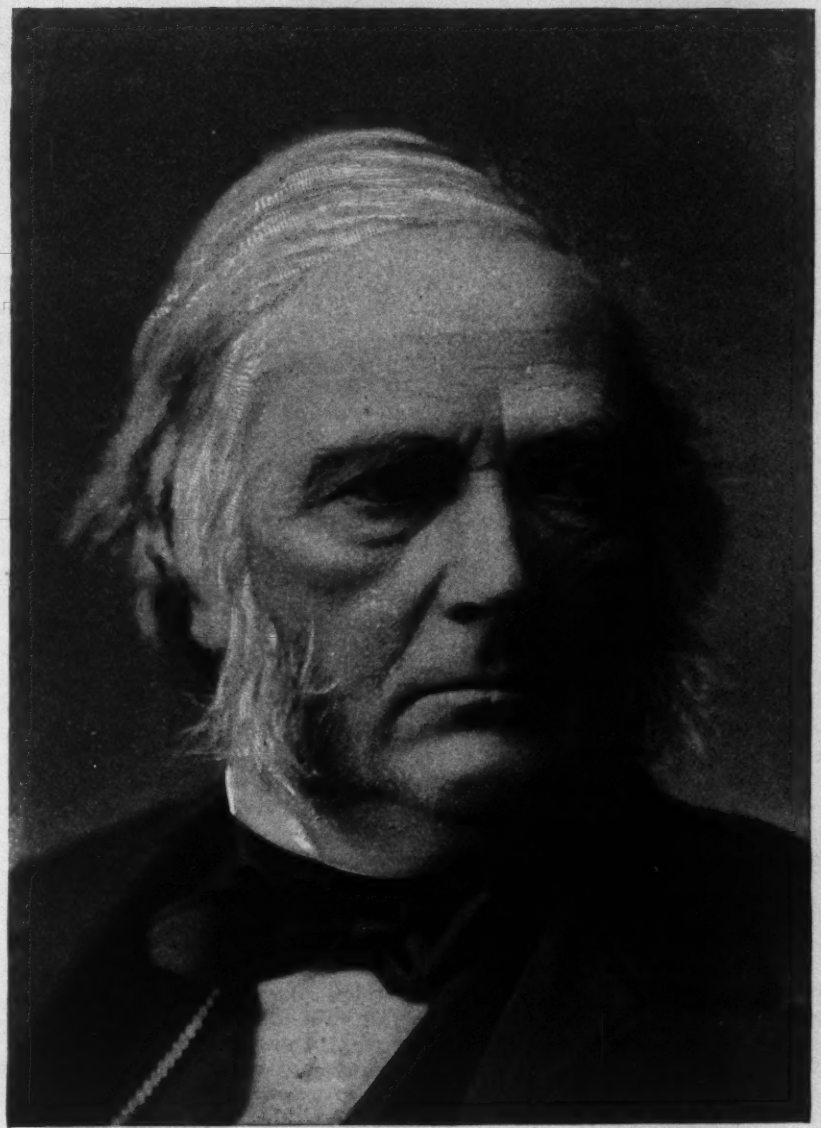
The atmosphere of the day is chilled with the spirit of unbelief. Need we fear for religion? It is as if we asked, Need we fear for eternal truth, for the reign of the Almighty? Unbelief is but a passing wave. The material and scientific progress of the age has begotten an over-estimate of nature, and draws a film over eyes which would seek the supernatural. The realities of the supernatural and man's profound need of them endure, and his reason will not lose sight of them. The protest against unbelief will bring religion into bolder relief, and the widening thoughts of men along other lines of progress will prove more clearly that religion is the need of all progress, as God is the need of all being.

PÈRE HYACINTHE FORESEES A LARGE FRATERNITY OF MEN UNDER THE PATERNITY OF GOD.

"By the twentieth century," said Victor Hugo, "there will be neither dogmas nor frontiers." He was doubly deceived. To speak only of frontiers, they will exist as long as the nations, to which they keep a distinct physiognomy and mutual independence. What is true is, that the frontiers shall no longer be marked with blood nor the nations be filled with hatred. At last, all freed from the Cains, the world will see the fraternity of men under the paternity of God.

Upright souls are destined to meet some day in the same religion, and there will be, I repeat again, with the Bible, here below or elsewhere, but one flock, under one shepherd.

HYACINTHE LOYSON, *Priest.*



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THE DUKE OF ARGYLL.

THE COMING SPIRITUAL AWAKENING.

T. T. MUNGER, AUTHOR OF "ON THE THRESHOLD," "THE FREEDOM OF FAITH," ETC.

I have no hope for the future of the world, except that which is suggested by and based on evolution, which I regard as the name of a divine and gracious force by which the world is advanced along a line of progress from the lower to the higher, from the simple to the complex, from the inorganic into the organic, from the brute into man, from instinct into mind, and thence through the moral into the spiritual, where there is full freedom and perfect life.

The goal of creation is spirit, and the final condition is freedom.

It is because I see so much proof of such progress to such an end that I have hope and confidence in the future of humanity, and am not cast down by the evil of the present. Of course, I regard Christianity as a great factor in this process.

T. T. MUNGER.

A SPIRITUAL RENAISSANCE PREDICTED BY TALCOTT WILLIAMS OF THE "PHILADELPHIA PRESS."

A spiritual renaissance is about to mark the next great development of thought. In science the drift is now away from a mere material explanation of the universe. Biologists admit that the living cell displays an energy inexplicable through its components only. Neither mere heredity nor mere environment nor both offer an adequate explanation of all the progress of life. Through the range of knowledge the same change appears. History is more and more seen and read in the light of Hegel's conception of the self-revelation of spirit in time. The guiding thread in the dusty labyrinth of political economy is spun less from the dumb wants, and more from the intelligent desires of men. Politics becomes the study of continuous forces, not altogether explained by a physical environment. Humanity as a whole, possessing a life, and therefore enjoying rights apart from brute nature, is a conception of steadily increasing weight in the affairs and imaginings of men. Vast eddies and counter-currents there are; but the vaster tide and embracing swell is away from the mere materialism which half a generation ago seemed certain to strand human thought on the dry sand of a mechanical explanation of man and nature. Precisely as the sensual and material renaissance ended in a spiritual reformation for North Europe, precisely as the material encyclopædist spirit of the last century flowered in the spiritual message of Kant in Germany, of Wordsworth and his poetical progeny in England, of the supremely spiritual art of Corot and Millet in France, so the material progress and discovery of the past forty years are but the scaffolding which will fall to show that advancing humanity has again erected a temple to the worship of the Spirit.

TALCOTT WILLIAMS.

NATIONAL PROGRESS AND WAR.

AMERICA'S GREAT FUTURE.—PROFESSOR HUXLEY.

I comply with your request by writing out on the next page a paragraph from an address which I delivered at Baltimore, seventeen years ago. If I mistake not, some part of the vaticinations I made then have come true; and the warning I ventured to give has not lost either utility or justification by efflux of time.

I am yours very truly,

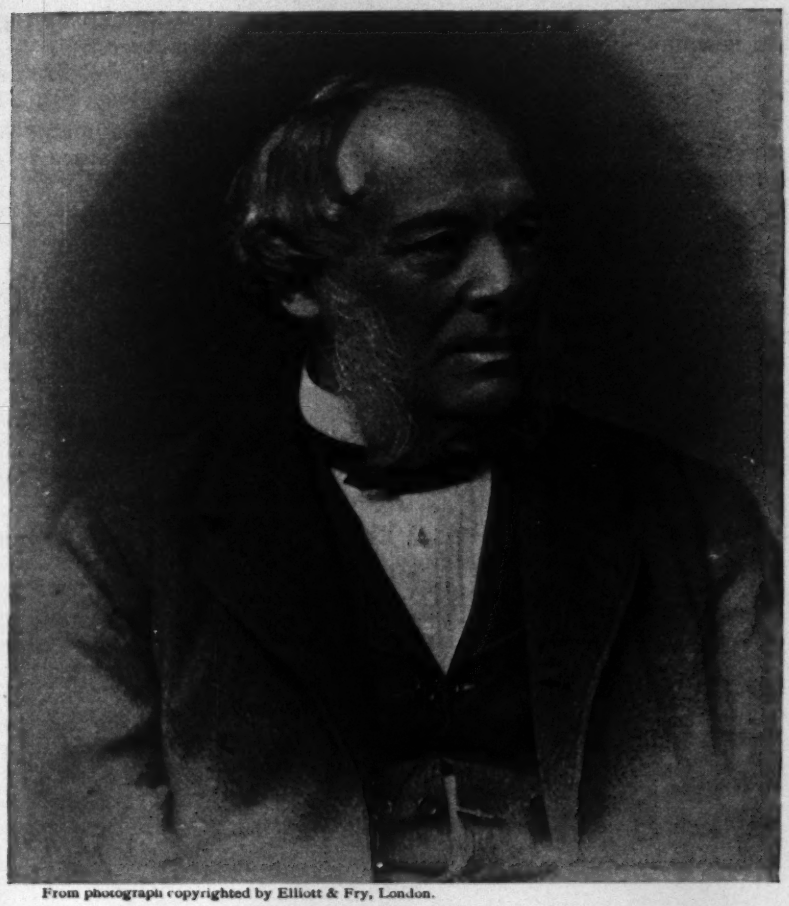
T. H. HUXLEY.

EASTBOURNE, *December*, 1893.

From address at the opening of the Johns Hopkins University, 1876:

"*Truly America has a great future before her, great in toil, in care, and in responsibility; great in true glory, if she be guided in wisdom and righteousness; great in shame, if she fail. I cannot understand why other nations should envy you, or be blind to the fact that it is for the highest interest of mankind that you should succeed; but the one condition of success, the sole safeguard, is the moral worth and intellectual clearness of the individual citizen.*"

T. H. HUXLEY.



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SAMUEL SMILES.

British People Genuinely Fraternal towards Americans.

To-day the dominant feeling among British people is genuinely fraternal towards Americans, and every right-minded man wishes that it may be intensified and perpetuated for the increase of the prosperity, honor, and beneficent influence of both nations.

LONDON, *November*, 1893. HENRY M. STANLEY.

America to Decide whether the World shall be Slavonic or Teutonic.

Napoleon said, "The world will be Cossack or Republican." The scene has been shifted since, and we are told that the world will be Slavonic or Teutonic. True—and the Anglo-Saxon race in America will have to decide which it is to be.

OXFORD, *November*, 1893. F. MAX MÜLLER.

Fight for Man's Free Development.

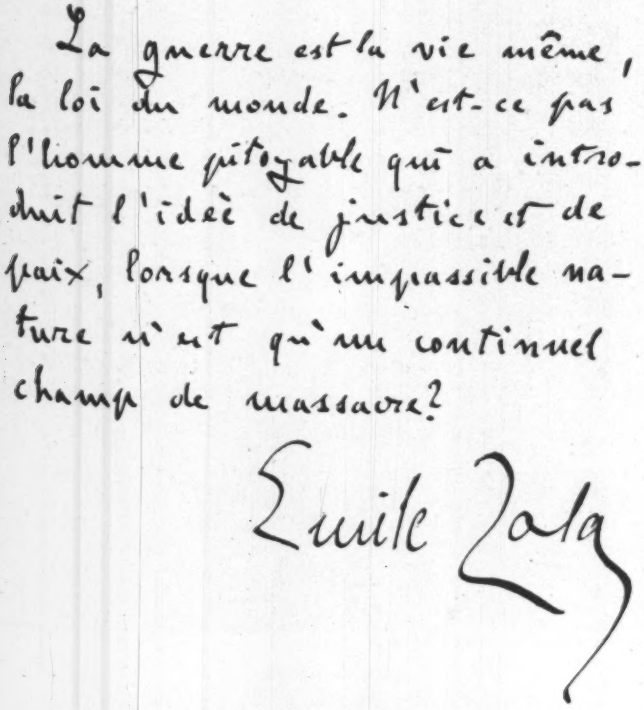
A great patriot once said, "Mankind has but one single object—mankind itself; and that object has but one single instrument—mankind again." If this be true generally, it must be preëminently true for every member of that imperial race to which belongs, unquestionably, the prerogative of shaping the future destinies of the world. It is the duty of every citizen, and still more of every Christian, to fight—if need be, even single-handed—for all influences which can promote, and to fight, at all

costs, against every custom and every compromise which obviously tends to hinder, the free development of man's moral and spiritual nature.

DEAN'S YARD, LONDON, *November*, 1893. F. W. FARRAR.

War is the very life, the law, of the world. Is it not pitiful man who has introduced the ideas of justice and of peace, since impassible nature is only a continual field of slaughter?

FRANCE, *November*, 1893. EMILE ZOLA.



Germans United whenever there is Danger.

With us all parties disappear as soon as the situation becomes serious, as in 1866, when the war was not popular; as in 1870, when we were not united. It will be the same in the future; whenever there is danger we shall find ourselves united.

PRINCE VON BISMARCK.

A Certainty of Peace more Destructive than War.

The certainty of peace—I do not say peace—will engender before half a century a corruption and a decadence more destructive to man than the most horrible wars.

MELCHIOR DE VOGÜE.

SOCIAL CONDITIONS AND CHANGES IN THE FUTURE.

THE CONDITION OF WOMEN AS FORESEEN BY JULIA WARD HOWE.

Women at Last Recognized as Energetic Self-supporting Members of Society.

The wonderful advance in the condition of women which the last twenty years have brought about makes me a little diffident of my ability to prophesy concerning the future of the sex. At the beginning of the first of these decades, few would have foretold the great extension of educational opportunities, the opening of the professions, the multiplication of profitable industrial pursuits,

all of which have combined to place women before the world in the attitude of energetic, self-supporting members of society. Even the vexed suffrage question has made great progress during the time specified, pushing itself slowly and steadily forward until in three States of the Union it has attained an impregnable position, while in several others it has a partial efficiency and recognition.

The Co-operation of Women in Public Affairs will yet be Demanded by Men.

The changes which I foresee are all further developments of the points already gained. I feel assured that, in the near future, the coöperation of women in municipal and in State affairs will be not only desired, but demanded by men of pure and worthy citizenship. Mothers, wives, sisters will no longer stand as suppliants before State legislatures, asking that they may become politically the equals of men who profess to treat them as superiors, but who really combine to keep them in a state of perpetual minority. The true progress of civilization is from the assumption of privilege to the recognition of right. In our country this progress already embraces the whole of one sex. The laws of moral equilibrium will speedily place the other sex in an equal condition, exalting the dignities of domestic life, and making the home altar rich with the gifts of true patriotism and wise public spirit. JULIA WARD HOWE.

A MORE PERFECT ORGANIC UNION OF HUMANITY FORESEEN BY WASHINGTON GLADDEN.

The best promise of the near future is a more perfect realization of the organic unity of humanity. I hope that men are slowly learning that "no man liveth unto himself;" that "we are members one of another." For some centuries we have been moving "from status to contract," and society has reaped large gains from the enfranchisement of the individual. Let us hope that the movement now in progress is from contract to fraternity, and that the enlarged powers of each will be employed with more and more of conscious purpose for the good of all. WASHINGTON GLADDEN.

HISTORY REPEATED.—EX-SENATOR INGALLS.

Sorrow, Ignorance, and Sin Indispensable to Humanity.

The events of history, like the figures of the dial on which the monotonous index records the activity of invisible forces, are a series of repetitions. Man will continue in the future, as heretofore, to be governed by ambition, love, cupidity, the desire for pleasure, and the restraints of conscience. As there are no undetected energies in the soul, destiny can have no further denouement. The disappearance of evil from the earth is not probable. Ignorance, want, sin, and misery are indispensable to humanity, because without them virtue could not exist, benevolence would cease, and intellectual progress would be impossible. Alexander wept that there were no more worlds to conquer. God might weep were there no more worlds to save. JOHN J. INGALLS.

Small Farmers Threatened with Extinction.

Your lot to-morrow, small proprietors, either isolated or associated together, is this, if you do not defend yourselves: Your fields and your harvests will be taken; you yourselves will be taken; you will be tied to some iron engine, smoking and strident, and, enveloped in the smoke of the coal, will have to swing your arms on a piston ten or twelve thousand times per day. That is what then will be called agriculture; for we are in an age of science and of method, and our rulers, served by an army of chemists and professors, prepare for you a social organization in which everything shall be regulated as in a factory, where the machine directs everything, even the men, who become simple wheels, which are thrown aside when they dare to reason or to exercise their will-power. ELISÉE RECLUS.

Nothing but Work the Future of Society.

The coming century will be a century of work. Do we not see already, in the increase of socialism, the social law of the future form itself—a law of work for all—work, the regulator and pacifier? How grand and healthy would be that society in which every member would share his logical part of the work! The man who works is always good. Hence I am convinced that the only faith which can save us is the belief in the efficacy of duty accomplished.

EMILE ZOLA.

A Disastrous Conflict Menacing Society.

In studying the condition of the workingman we have sought to extinguish the disastrous conflict which torments and menaces human society, over which hangs, like a black sky, the wrath of popular passions, announcing by terrific thunder-claps the breaking loose of a tempest fraught with shipwrecks.

POPE LEO XIII.

The Fall of all Sovereignties, even that of Woman.

I see in the near future the fall of all sovereignties, even that of woman, who, in claiming her rights, renounces certain privileges, old as the world, to assume responsibilities and to become only the equal of man.

TH. BENTZON.

THE FUTURE IN EDUCATION.

The Higher the Education, the Brighter the Hopes of Humanity.

The future of society depends upon the progress of liberal education. As prosperity includes intellectual and moral welfare in addition to material enjoyments, so liberal education comprises the study both of man and nature. Science and history in their broadest sense are the teachers of the human race, and the more widely their lessons are taught, the brighter the hopes of humanity.

DANIEL C. GILMAN.

JOHNS HOPKINS UNIVERSITY, BALTIMORE, *December* 7, 1893.

When we speak of the future and of education we think of children. But education lasts all one's life.

Should be Compulsory.

The education of the child should be compulsory. Nature desired this in making the child credulous. Reason proves it. The human being must always be guided by reason: by his own reason when he has one; by the reason of others when he cannot make use of his own.

As to man, it is to his reason that we must address ourselves. We explain to him what is expected of him. We furnish him the means of reflection; we appeal to his judgment and his will. This is a philosophical education.

Morality Should be Imposed, not Proposed.

The educator, whether he be father, mother, or school-master, does not propose morality to children; he imposes it. Morality is not submitted to deliberation in the nurseries and in the schools. Children do not know how to deliberate, but they know how to believe. The first book of morality should have but two pages. The first book of Christian morality (the Commandments) has but ten lines.

JULES SIMON.

IMAGINATIVE LITERATURE IN THE FUTURE.

The Novel Growing into History.

What shall be the novel, the literature, of the future? To reply to this question one would need to have a famous pythoness up his sleeve. In the first place, what will the France of to-morrow be? Will she even have a literature? Everything is to be feared at

an epoch when the academy amuses itself in deforming the national orthography; when the high priests of the dictionary threaten to become its murderers. In the special case of the novel—admitting that the French of the future shall continue to read and write novels—its need of truth, of exactness, seems to me to carry it from day to day toward history; I mean, of course, petty history—for me the most interesting of all—diaries, memoirs, monographs.

ALPHONSE DAUDET.

Poetry to Emerge from an Orgie of Rhythm.

What will be the poetry of the future? It will be calm, simple, grand, almost classic, when it emerges at last from the orgie of rhythm which has distinguished it in these later years. Poetry must return to its origin. The romance poets in this connection have a good cadence, but they Ronsardize too much.

P. VERLAINE.

REFLECTIONS AND MOTTOES FOR THE NEW YEAR.

OF the following reflections and mottoes suggested by the opening of a new year, the first interest attaches to the contribution of Professor Tyndall, since it was written but three days before his tragic death, which robbed the world of a man equally great in power of original discovery and in ability to interpret the results of discovery to the public.

PROFESSOR TYNDALL'S LETTER AND SENTIMENT.

"HIND HEAD HOUSE, HASLEMERE, *December* 1, 1893.

"MY DEAR SIR: It gives me great pleasure to send you a 'sentiment' which I hope will meet your views. And it is especially agreeable to me to embody in the sentiment the name of an American writer, who above all others merits and has received my reverence and love.

"I am debarred from signing this note myself by an attack of rheumatism in the wrist, which disqualifies me from holding a pen.

"Yours very faithfully,

"JOHN TYNDALL."

The sentiment that the foregoing letter contained was this:

". . . . I choose the nobler part of Emerson, when, after various disenchantments, he exclaims, 'I covet truth!' The gladness of true heroism visits the heart of him who is really competent to say this."

John Tyndall.

Hind Head House, Haslemere.

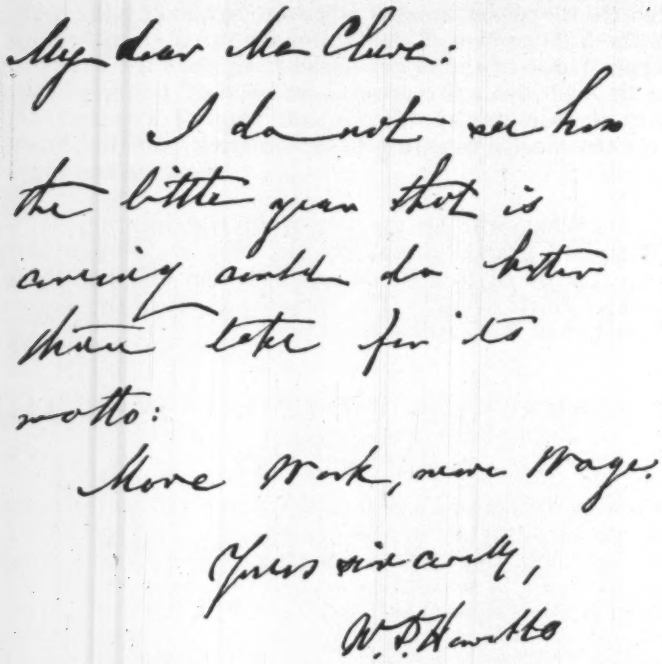
Begin the Year by Giving Thanks.

The blessings which as a nation we enjoy are so many and precious that our hearts should be filled with sincere gratitude; and this sentiment of grateful thanks should prompt us both to render praise to the "Giver of all good gifts," and to be more appreciative henceforth. I know of no better thought to fill our minds now than this, which will undoubtedly secure a year rich in fruitful personal endeavor. We cannot begin the new year more profitably than by giving thanks. For gratitude is at once a very essential form of divine worship, a most acceptable prayer to God, and a certain assurance of future blessings.

Faithfully yours in Christ,

J. CARD. GIBBONS.

BALTIMORE, MD., *December* 7, 1893.



Secure One Good Memory for Each Year.

A year has so slight a record that all should try to secure for each year at least one good memory somewhere.

HENRY IRVING.

1893.

Unite All who Love in the Service of those who Suffer.

DEAR MR. MCCLURE: I don't know whether the enclosed will be regarded by you as an appropriate motto for 1894, but it condenses into a formula the essence of all that I have been trying to say for some years: *Work for the union of all who love in the service of those who suffer!*—as the most effective means of realizing the catholic ideal of the Church, and of promoting the welfare of mankind.

I am yours sincerely,

W. T. STEAD.

CHICAGO, *December* 7, 1893.

Elizabeth Stuart Phelps Ward Prefers an Old Motto to a New.

DEAR MR. MCCLURE: The world has so many strong old mottoes that I refrain from adding a newer or weaker to the list; suggesting instead, by way of inspiration for the year to come, the great line from one of our best hymns: "Guide me, O Thou great Jehovah!"

Yours truly,

E. S. P. WARD.

Obey God, and never fear the devil.

CHARLES A. DANA.

A Man Dies, but his Acts Survive.

The career of a great man remains a monument of human energy. The man dies and disappears; but his thoughts and acts survive, and leave an indelible stamp upon his race. Thus the spirit of his life is prolonged and perpetuated, moulding the thought and will, and thereby contributing to form the character of future generations.

LONDON, *November*, 1893. SAMUEL SMILES.

"God's music will not finish with one tune!"—From "With Sàdi in the Garden."

EDWIN ARNOLD.

LONDON, *December*, 1893.

For 1894.

The advice of the late Master of Balliol in all undertakings:—

First make your arrangements.
Then trust in Heaven.
And in no case worry.

Sincerely yours

A. T. Quiller-Couch.

Paris Keeps New Year's.

"Paris has kept her respect for New Year's Day. From the first of December childhood invades the city. Handcarts pass by filled with gilded drums, with wooden horses, with toys by the dozen. . . ."

ALPHONSE DAUDET.

PARIS, *November*, 1893.

Paris a gardé le respect du jour de l'an. Dès le commencement de décembre, un immense enfantillage se répand par la ville. On voit passer des voitures à bras remplies de tambours, de chevaux de bois, de jouets à la douzaine....

(Le Nabab)

Alphonse Daudet

It is sometimes painful to do one's duty. It is never so much so as not to have done it.

When man no longer causes the death of his neighbor, and no longer fears it for himself, he will be God.

Let us begin by admiring what God shows us; we shall no longer have time to search for what he conceals from us.

A. DUMAS.

PARIS, *November*, 1893.

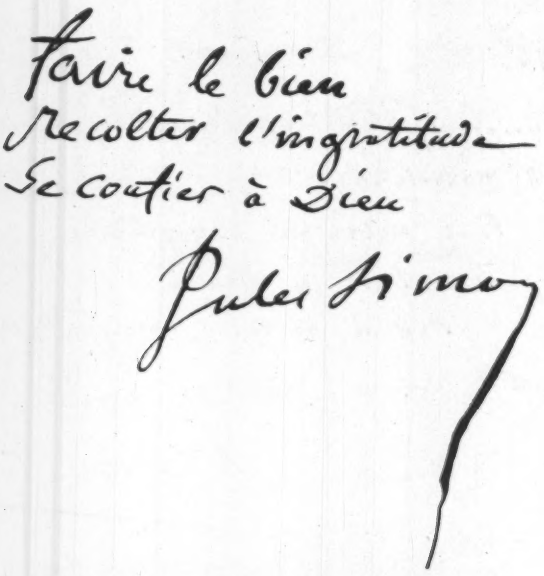
In the matter of doing good, obligation ceases only when power fails.

L. PASTEUR.

PARIS, *November*, 1893.

To do good, to reap ingratitude, to confide one's self to God.

PARIS, *November*, 1893. JULES SIMON.



Give without hope of return ;
Give without knowing who receives ;
The noblest gesture there is,
Is to open wide the hand.

PARIS, *November*, 1893. FRANÇOIS COPPÉE.

Learn what Kind of an Earth you Live in.

The thinker is not satisfied to see the inhabitants of the earth living on their planet without knowing where they are. He would like to have them possess at least the elementary notions of astronomy, which would teach them on what they walk, and what point they occupy in the universe.

JUVISY, FRANCE, *November*, 1893. CAMILLE FLAMMARION.

Make God real, make Art holy, make Righteousness beautiful, and the family tie universal.

G. W. CABLE.

Truth is cruel (La verité est cruelle).

LOYSON.
[Père Hyacinthe.]

PARIS, *December*, 1893.

The dawn of a new year reminds one that light does not only come from the East. Europe is constantly looking to America for illumination.

LONDON, N. W., *December*, 1893. MAX O'RELL.

May this New World in peace and light unfold
All blessèd seed it taketh from the Old.

ARGYLL LODGE, KENSINGTON, *December*, 1893. ARGYLL.